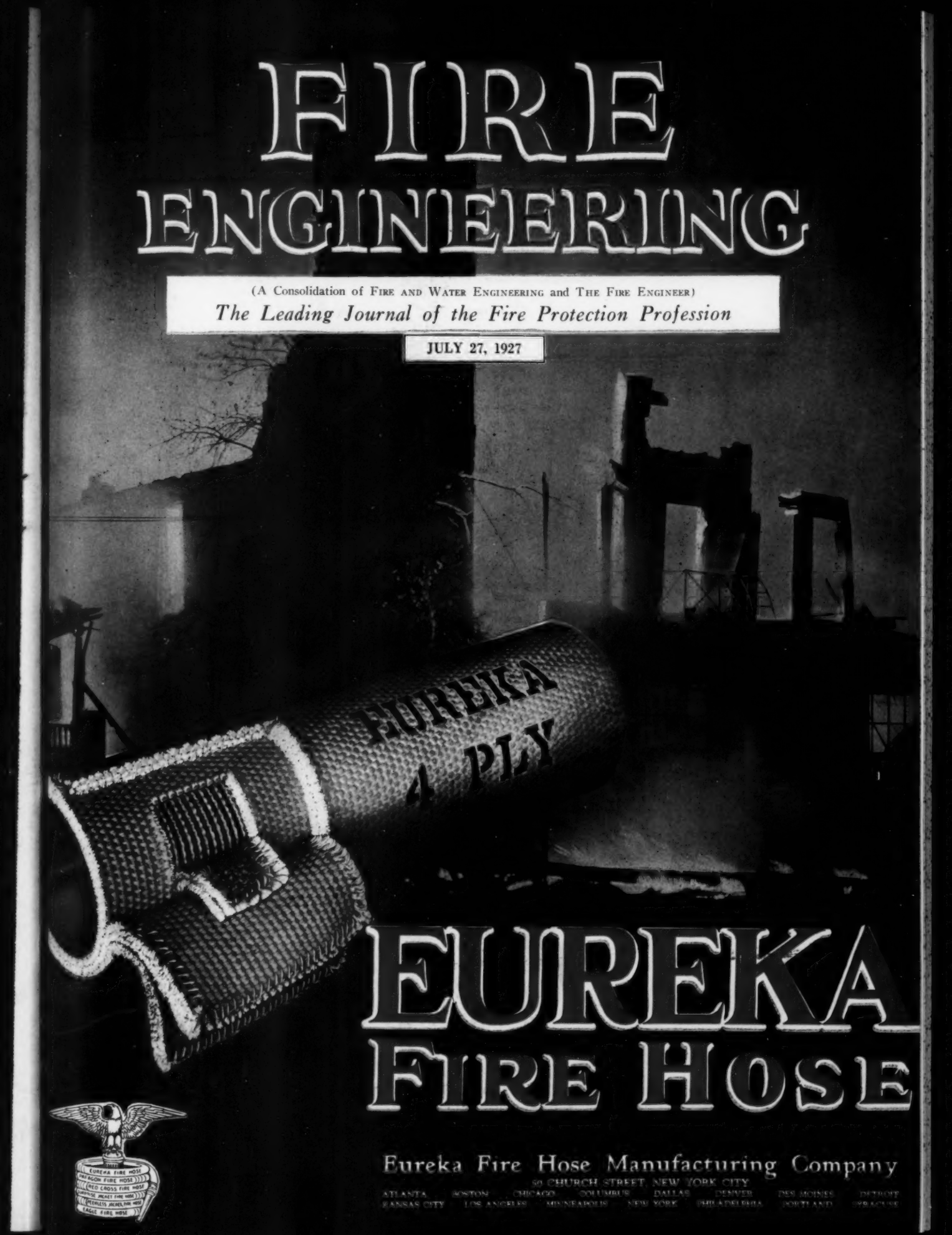
FIRE ENGINEERING

(A Consolidation of Fire and Water Engineering and The Fire Engineer)

The Leading Journal of the Fire Protection Profession

JULY 27, 1927

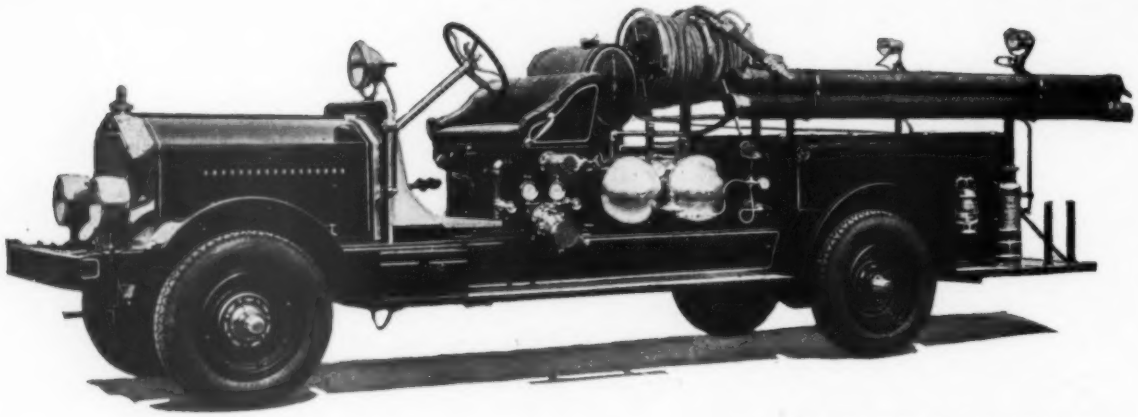


EUREKA
FIRE HOSE

Eureka Fire Hose Manufacturing Company

50 CHURCH STREET, NEW YORK CITY

ATLANTA BOSTON CHICAGO COLUMBUS DALLAS DENVER DES MOINES DETROIT
KANSAS CITY LOS ANGELES MINNEAPOLIS NEW YORK PHILADELPHIA PORTLAND SYRACUSE



The new Childs *"Thoroughbred" Heavy Duty Fire Apparatus—available in all the usual combinations*

Why we call it the "THOROUGHBRED"

POWER alone wouldn't be enough. Nor speed alone. Nor even stamina. But when these and a dozen other desirable qualities have been developed over a period of thirty years and then combined into a unit that comes through the most severe tests crying for more punishment, "Thoroughbred" is the only name that does it justice!

This is not the place to attempt even an outline of the features which make the new *Childs* Heavy Duty Motor Apparatus a valuable addition to the fire-fighting equipment of any community. Our literature tells the whole story. And we believe you will find the prices of this new line an agreeable surprise.

FOAMITE-CHILDS CORPORATION

Fire Protection Engineers and Manufacturers

373 Turner Street, Utica, N. Y.

Sales and Engineering Representatives in all leading cities

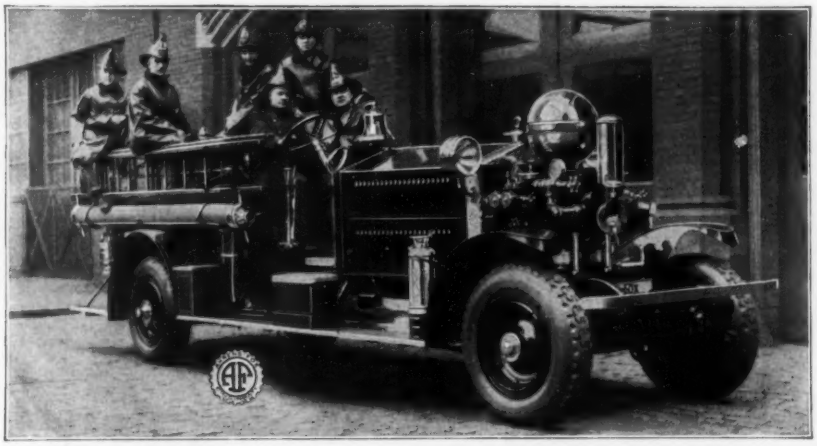
Foamite-Childs of Canada, Ltd., Toronto, Ontario.

Foamite-Childs Protection

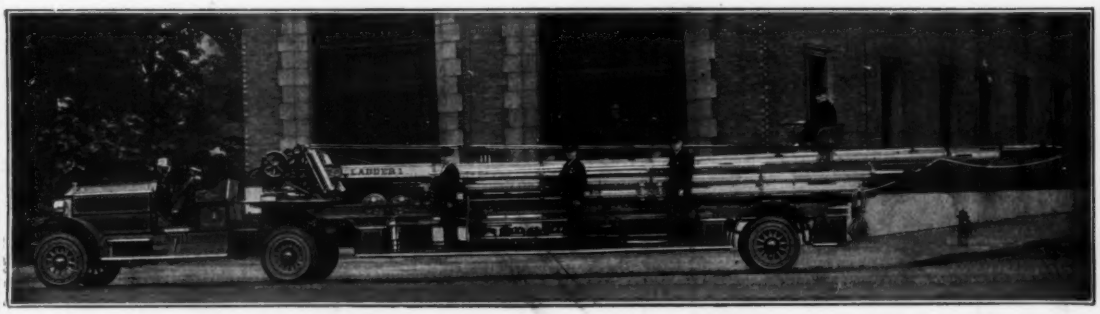
A Complete Engineering Service

Against Fire

Ahrens-Fox at Portland, Oregon



ONE THOUSAND GALLON PISTON TYPE PUMPER BOOSTER EQUIPPED



AHRENS-FOX MODERN AERIAL LADDER TRUCK

VISITORS to the Convention
of the
Pacific Coast Association of Fire Chiefs
August 4 to 6
International Association of Fire Chiefs
August 9 to 12
Are Cordially Invited to Inspect the
Ahrens-Fox Exhibit

The Ahrens-Fox Fire Engine Co.

"Builders of Quality Fire Apparatus"

Cincinnati, Ohio.

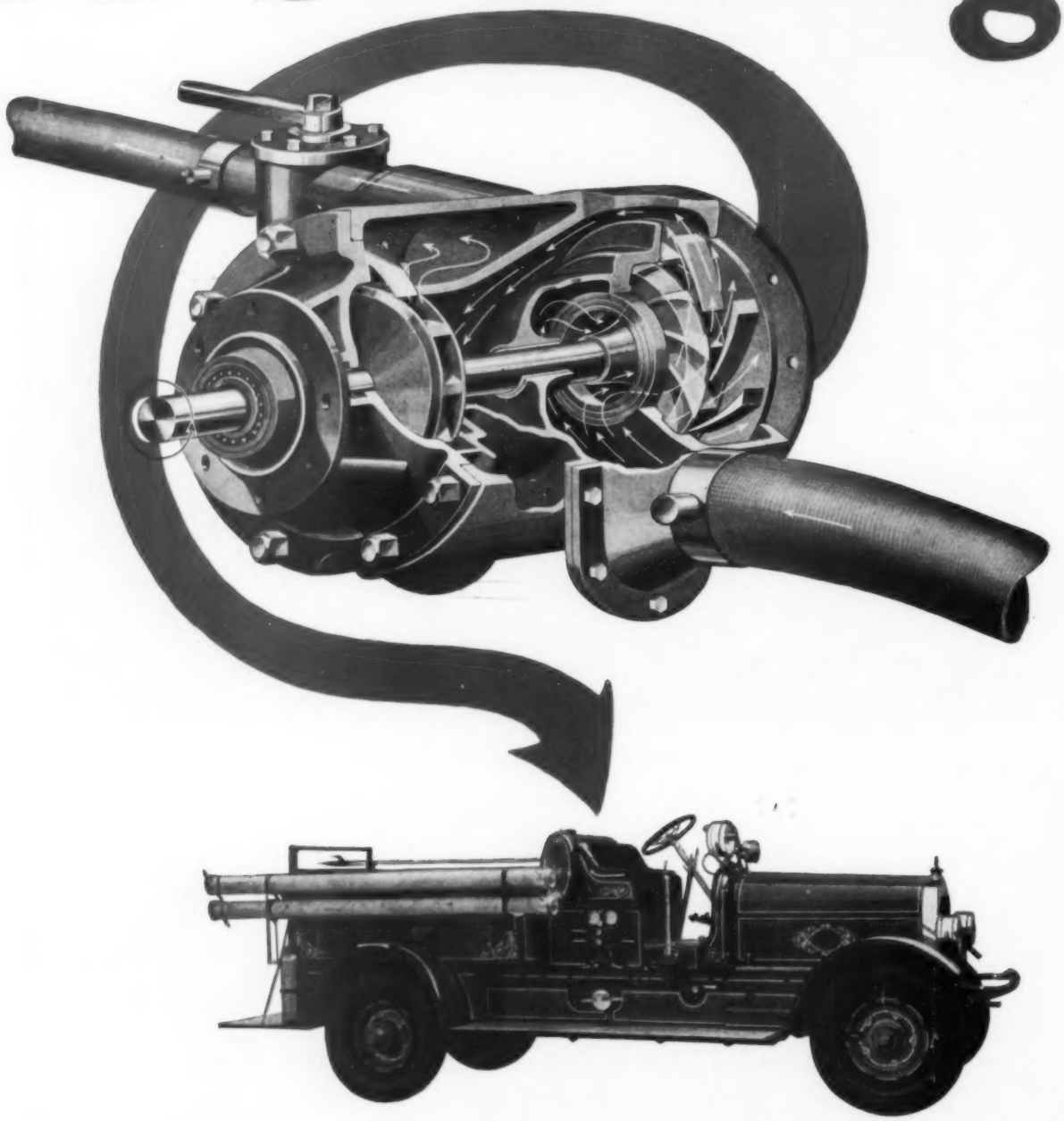
Pacific Northwest Representative, A. G. LONG CO., INC., Portland, Oregon
California Representatives, PACIFIC FIRE EXTINGUISHER CO., San Francisco and Los Angeles, Calif.

Eastern Representative,
J. A. PRESCOTT,
Fisk Bldg., New York

New England Representative,
CARLOW AUTO CO.,
Taunton, Mass.
Canadian Representatives,
BICKLE FIRE ENGINE CO.,
Woodstock, Ontario, Canada.

Chicago Representative,
HENRY R. EARLY
Hotel Woodmere
4641 Woodlawn, Chicago

A Startling



Where you see a Seagrave pumper in operation, a Seagrave Centrifugal Pump is doing duty, steadily, thoroughly and efficiently. It is always dependable—in the most severe battles against fire—through the longest term of service.

Guarantee!

We guarantee our Centrifugal Pump against depreciation for a period of ten years—

Such a guarantee could not be placed upon an untried product—a moment's thought will tell you that. The Seagrave Centrifugal Pump, with which every Seagrave pumper is equipped, has been tried and tested time after time—here and in actual fire-fighting service.

The Seagrave Centrifugal Pump has only one moving part, as shown in the illustration—an impeller shaft supported on ball-bearings outside the pump casing. Except for packing glands around the shaft to prevent leakage of water and a self-lubricating packing ring between the impellers, this is the only place where the moving part comes in contact with the stationary parts of the pump.

Absence of friction, because of this simple construction, assures long, efficient life for our Centrifugal Pump and permits us to make this startling guarantee.

The SEAGRAVE *Corporation*

COLUMBUS, OHIO

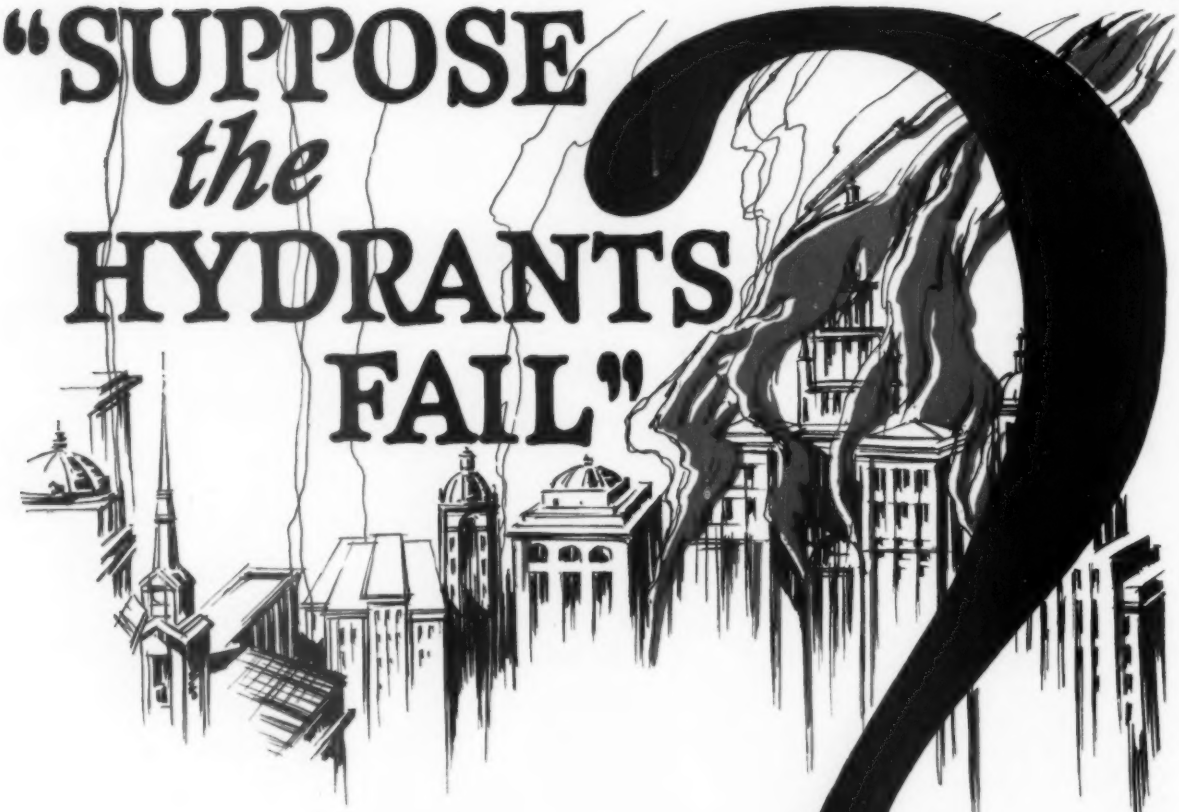
BRANCH OFFICES AT:

Boston, Mass.
New Haven, Conn.
Birmingham, Ala.
Philadelphia, Pa.

Chicago, Ill.
Dallas, Texas
Los Angeles, Cal.

Kansas City, Mo.
Pittsburgh, Pa.
Seattle, Wash.
San Francisco, Cal.

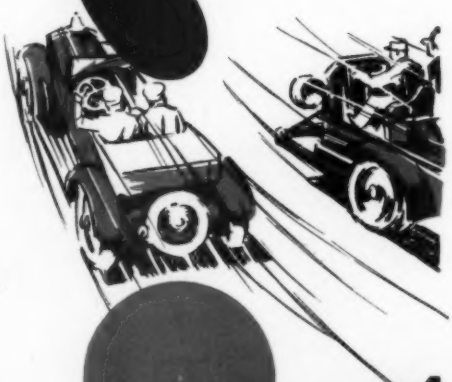
"SUPPOSE *the* HYDRANTS FAIL"



The answer is—install
DARLING HYDRANTS!

They are ready to go into instant action day or night—year in and year out. They are designed to deliver the greatest possible volume of water. The barrels are large and there are no unnatural obstructions to check the flow. And Darlings are sturdy enough to resist heavy impacts.

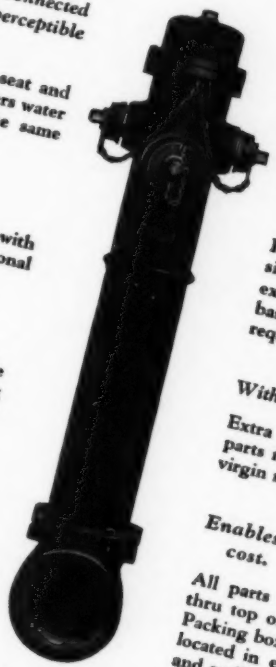
Wherever used Darling Fire Hydrants win confidence



DARLING VALVE AND MANUFACTURING CO.
Williamsport, Pa., U. S. A.
New York Chicago Oklahoma City Houston

DARLING

What a DARLING HYDRANT will do



Deliver water to nozzles to the capacity of the line connected to Hydrant with no perceptible loss in pressure.

Short opening thru valve seat and the extra large barrel delivers water to the nozzles at about the same pressure as in the main.

Operate easily.

Central operating valve rod with direct action on valve. No torsional friction and strain.

Shut off effectively.

Conical shape oak tanned sole leather valve having gradual closing on tapered bronze seat with no possibility of water hammer.

Quickly and thoroughly drains water from barrel after hydrant is closed.

All bronze, non-clogging, three-hole drain with automatic action and positive operation.

Permits installing directly in water main.

Hydrants can be equipped with tee type base when it is desired to install the hydrants in the water main.

Prevent water escaping if barrel should be broken above valve.

Compression type valve closing with the pressure.

Readily conform to changes in installation conditions.

Hydrant can be raised to any desired length by simply bolting an extension piece between barrel and base of hydrant. No other parts required.

Withstand hard use.

Extra heavy construction and all parts made from the best grade of virgin metals.

Enables servicing at minimum cost.

All parts including seats removed thru top of hydrant. No digging. Packing box and operating threads located in extreme top of hydrant and easily accessible for lubricating.

Affords minimum installation cost.

Not necessary to excavate below trench level to set hydrant as the waste water drain is located directly above the main valve.

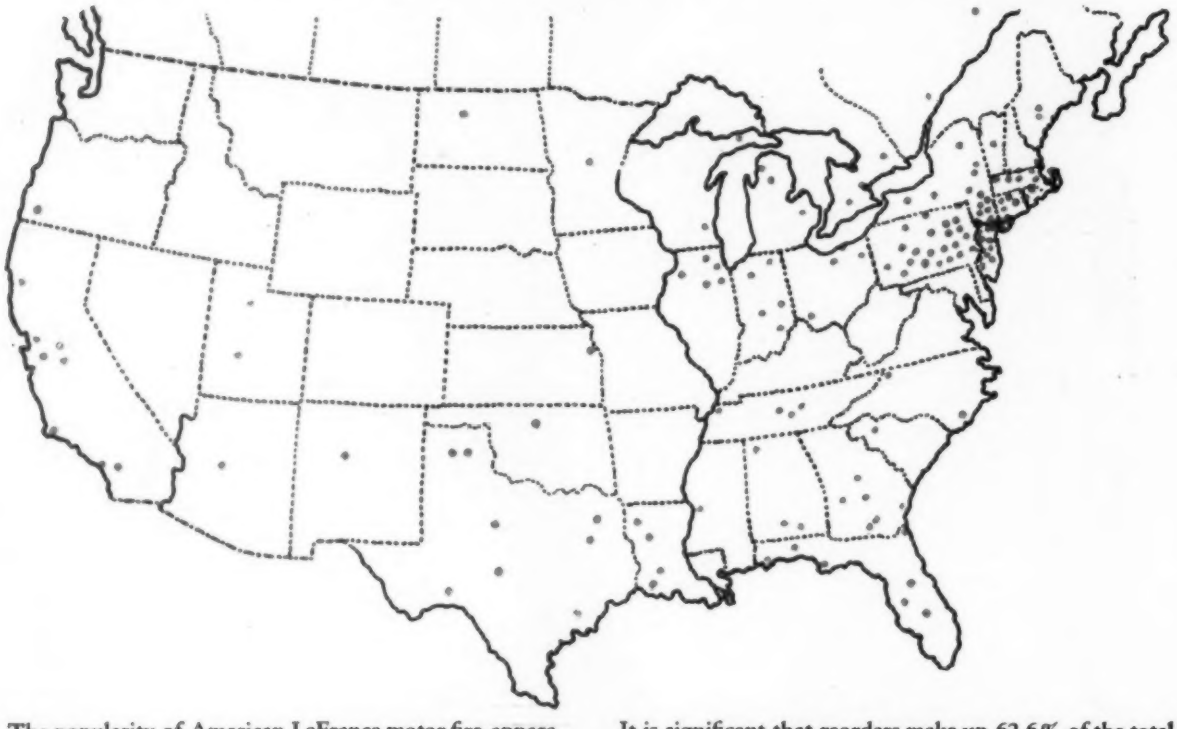
DARLING VALVE AND MANUFACTURING CO.

Williamsport, Pa., U. S. A.

New York Chicago Oklahoma City Houston

FIRE HYDRANTS

The Greatest Record



The popularity of American-LaFrance motor fire apparatus is widespread and enduring. From all corners of the world come fire departments seeking the known advantages of American-LaFrance dependability.

It is significant that reorders make up 62.6% of the total volume of American-LaFrance sales for the period of January 1 to June 15, 1927. Such a testimonial of proved satisfaction merits attention and study.

ALABAMA
*Andalusia .....(1)
Evergreen .....(1)
*Sheffield .....(1)

ARIZONA
Prescott .....(1)

CALIFORNIA
*Culver City....(2)
*Glendale .....(1)
Kingsburg .....(1)
*Los Gatos.....(1)
Manteca .....(1)
Newport Beach (1)
*Santa Maria...(1)
*Turlock .....(1)

CANADA
British Columbia
*Vancouver ..(1)
Ontario
*London .....(2)
*Peterboro ...(1)
*Toronto .....(1)
Quebec
Shawinigan Falls .....(1)
*Westmount ..(1)

COLORADO
*Denver .....(2)

CONNECTICUT
*Bridgeport ....(3)
Chester .....(1)
Madison .....(1)
Southport .....(1)
West Haven...(1)

DELAWARE
Camden-Wyoming ...(1)

FLORIDA
*Bartow .....(1)
*DeFuniak Springs .....(1)
Fernandina ...(1)
*Melbourne ....(1)
*Pensacola .....(1)
*Plant City.....(1)
Wildwood .....(1)

FOREIGN
Cuba
Matanzas ...(1)
South America
Armenia, Colombia ..(2)

GEORGIA
*Albany .....(1)
*Brunswick ....(1)
Forsyth .....(1)
*Quitman .....(1)
*Valdosta .....(2)
Vienna .....(1)

ILLINOIS
*Cicero .....(1)
Lyons .....(1)
Matteson .....(1)
Morrison .....(1)
Oak Forest, Oak Forest Institutions .....(1)

INDIANA
Clarkesville ...(1)
*Indianapolis ...(1)
*Mishawaka ....(1)
*Peru .....(1)

KANSAS
Kansas City...(1)

LOUISIANA
Mansfield .....(1)
*Shreveport ....(2)
Ville Platte....(1)
Vinton .....(1)

MAINE
*Augusta .....(1)
Southport .....(1)

MASSACHUSETTS
*Amherst .....(1)
*Chelsea .....(1)
*Fairhaven .....(1)
*Nantucket ....(1)
*Newton .....(1)
Rockport .....(1)
*Salem .....(1)
*Shrewsbury ...(1)
Turners Falls..(1)
Wilmington ...(1)

MEXICO
Mexicali .....(1)

MICHIGAN
*Flint .....(2)
Imlay City.....(1)
Pigeon .....(1)
Vulcan .....(1)

MINNESOTA
*St. Cloud.....(1)

MISSISSIPPI
Rolling Forks..(1)

NEW JERSEY
*Asbury Park...(2)
*Camden County Bd. of Freeholders .....(1)
Clementon ....(1)
Clementon Twp.(1)
Hasbrouck Heights .....(1)
Little Falls....(3)
*Madison .....(1)
Mt. Ephriam...(1)
*Newark .....(2)
*North Bergen..(2)
*Nutley .....(1)
Oaklyn .....(1)
*Penns Grove...(1)
Pompton Lakes.(2)
*Red Bank.....(1)
*Riverton .....(1)
Rumson .....(1)
Union Twp....(2)
*Vineland .....(1)
Wildwood Crest (1)
Woodlynne ....(1)

NEW MEXICO
*Albuquerque ...(2)

NEW YORK
Amityville .....(1)
*Amsterdam ...(1)
*Catskill .....(1)
Elizabethtown ..(1)
*Elmira .....(1)
*Glen Cove, L. I.(1)
*Long Beach, L. I. .....(1)
*New York C'y.(12)
Nunda .....(1)
Pine Hill .....(1)
*Pt. Washington (1)
*Poughkeepsie ..(1)
*Schenectady ..(1)
*White Plains...(1)
Williston Park, L. I. .....(1)

NORTH CAROLINA
N. Wilkesboro..(1)
*Wilmington ...(2)

NORTH DAKOTA
*Minot .....(1)

OHIO
*Norwood .....(1)
*Painesville ....(1)
South Euclid ..(1)
Youngstown ...(1)

OKLAHOMA
*Enid .....(1)

OREGON
*Granta Pass ...(1)

PENNSYLVANIA
*Carnegie .....(1)
Cashtown .....(1)
*Charleroi .....(1)
Creighton .....(1)
Delaware Water Gap .....(1)
Etna .....(1)
*Indiana .....(1)
Locust Gap.....(1)
Ligonier .....(1)
*Mt. Joy .....(1)
*Nanticoke .....(1)
Nanty-Glo .....(1)
*New Kensington (2)
*Newport Twp..(1)
*Oakmont .....(1)
*Philadelphia ..(20)
Ridley Park....(1)
Roscoe .....(1)
*Shenandoah ...(2)
*Shippensburg ..(1)
Shoemakersville (1)
So. Langhorne .(1)
*Tamaqua .....(1)
*Wilkes Barre ..(2)

RHODE ISLAND
Cranston .....(2)
*Providence ....(4)
*Warren .....(1)

SOUTH CAROLINA
Clinton .....(1)
*Greenville .....(1)

TENNESSEE
*Cookville .....(1)
*Dyersburg ....(1)
Missionary Ridge .....(1)
Murfreesboro ..(1)
Rockwood .....(1)

TEXAS
Baird .....(1)
El Campo .....(1)
Gilmer .....(1)
*Lockhart .....(1)
*Mission .....(1)
Pampa .....(1)
Wellington ....(1)
Weslaco .....(1)

UTAH
Cedar City ....(1)
*Salt Lake City.(1)

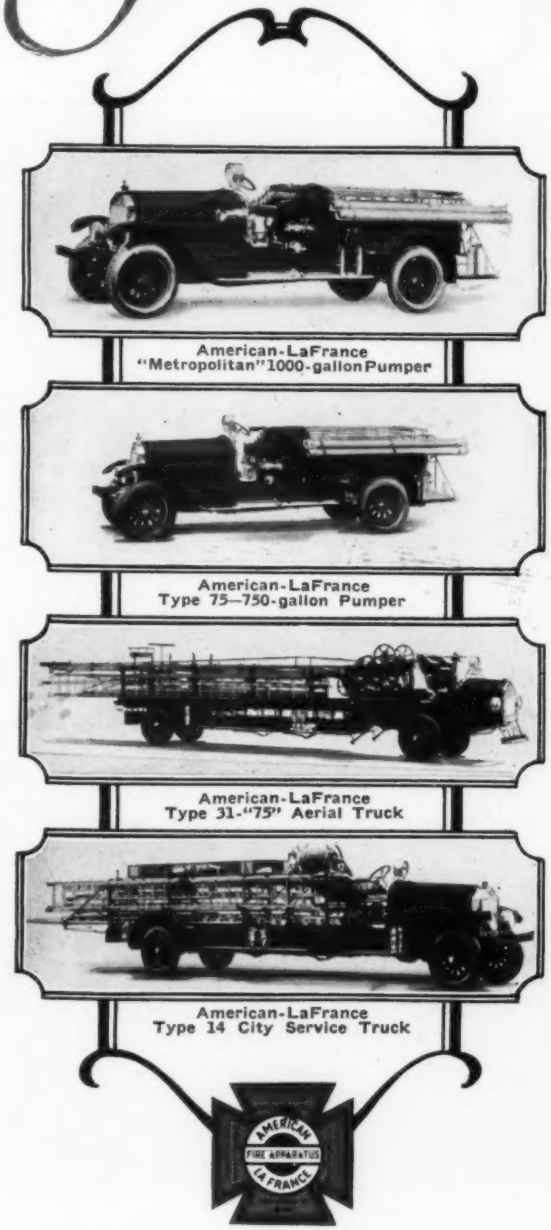
VERMONT
*Rutland .....(1)
*St. Albans ....(1)

WEST VIRGINIA
*Martinsburg ...(1)

WISCONSIN
*Town of Milwaukee .....(1)

*Indicates Repeat Orders by well satisfied customers

# of all Time — —



American-LaFrance
"Metropolitan" 1000-gallon Pumper

American-LaFrance
Type 75—750-gallon Pumper

American-LaFrance
Type 31-"75" Aerial Truck

American-LaFrance
Type 14 City Service Truck

TO attain leadership is difficult. To hold it is more difficult. To attain leadership of a field and hold it for long number of years seems super-human, but that is exactly what American-LaFrance has done.

For eighty-two years the American-LaFrance Fire Engine Co., Inc., has been in business. For almost twenty years it has been building motor-driven fire apparatus.

During that period American-LaFrance has led in volume of sales. The same period has seen American-LaFrance leading in mechanical improvements. Pumping records have been established from coast to coast. Speed records under adverse weather conditions have been made by American-LaFrance. In practically any large city, when there is a fire, you will find American-LaFrance Fire Apparatus present — for 90% of American fire departments operate American-LaFrance.

Fairly and squarely American-LaFrance has won and held its leadership — more firmly established today than ever. Not by idle boasts and empty claims, but on honest merit and through never ending efforts to deserve it, has American-LaFrance won and held the favor of American fire departments.

The record achieved by American-LaFrance over all these years has no equal in the annals of fire fighting. It is the greatest record of all time in fire fighting history. Deserved as it must have been, you can well afford to study the reasons that made it possible.

AMERICAN-LAFRANCE FIRE ENGINE COMPANY, INC.

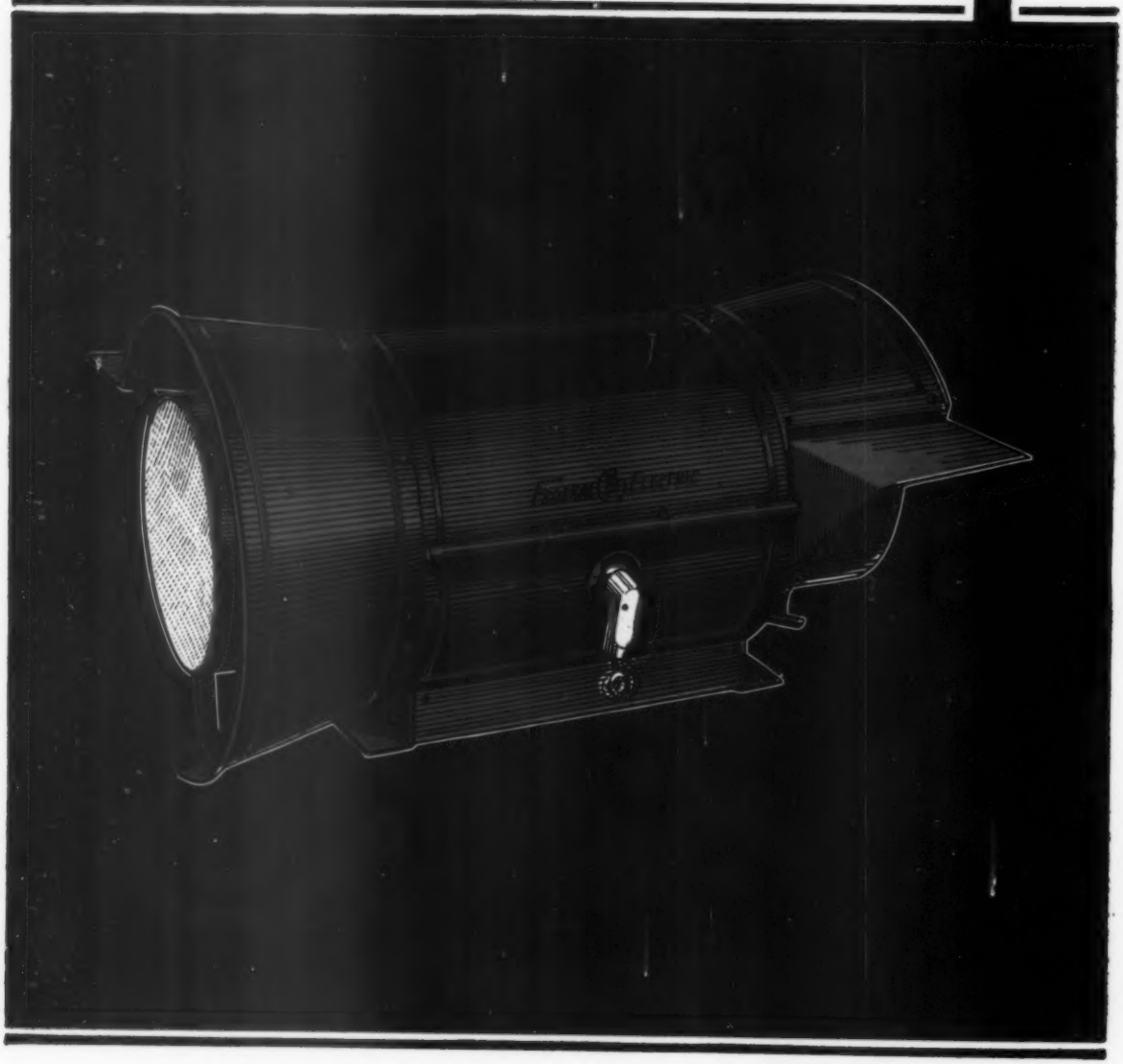
ELMIRA, N.Y.

BRANCHES
NEW YORK BALTIMORE
PHILADELPHIA PITTSBURGH
ATLANTA BOSTON CHICAGO

CANADIAN FACTORY
TORONTO, ONT.
MONTREAL VANCOUVER

BRANCHES
LOS ANGELES PORTLAND
SAN FRANCISCO DENVER
KANSAS CITY, MO. DALLAS

Every



FEDERAL

where

IT CODES

From Maine to California—from Canada to the Gulf—you will find Federal Sirens. Why? Because Federals are dependable—because merely the connecting of two wires codes the Federal unit.

Federal Sirens, because of the ease with which they are coded—because of their inbuilt superiority—are recognized everywhere by persons responsible for life and property—are recognized by "people who know" as the ultimate achievement in fire alarm code signals.

That is why 9 out of every 10 code installations are Federals.

Let us lay out a code system for your town—without obligation, of course.

Federal Electric Company
8700 South State Street
Chicago, Illinois

SIRENS

This Gasoline and Oil Fire
Was Extinguished with Amazing Rapidity by the

(Unretouched photo)

New National Foam System

Different from any other System of Continuous Foam Production.

Equipment for both Fire Department and Industrial Service.

Complete information gladly sent to all fire officials on request.

National Fire Protection Co.

1617 Sansom Street, Philadelphia

Est. 1899. Inc. 1901.

Ready Now!

for Delivery
for Demonstration
for Comparative Tests

THE NEW STERLING CODE-BLOWING SIREN

The Only Siren Designed Solely for Blowing Code Fire Alarm Signals

An entirely new development in electric fire alarm signals! Like the famous Sterling Model "M" in dependability and ability to be heard at great distances and as distinctive in tone—otherwise different.

The motor is designed and built for rapid acceleration. Operated by hand lever, by central station transmitter or from box system. Runs on any 220-v circuit. GUARANTEED BEST in its field!

Your own box system is easily adapted for use with this new siren, or a Sterling box system may be economically installed. No batteries required, box operation on 110-v system.

The Newest Product of the Oldest Makers of Fire Alarm Signals in the Country. Write for Particulars.

THE STERLING SIREN FIRE ALARM CO., INC.

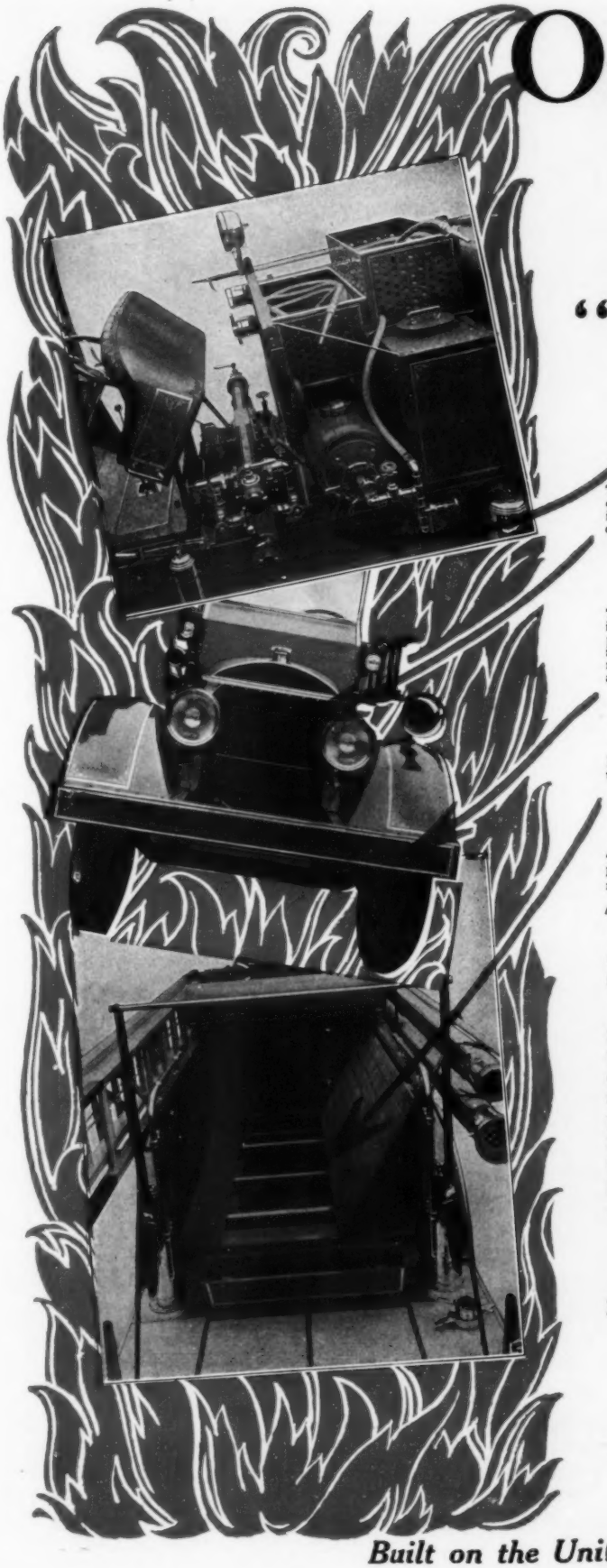
61 Allen Street
Rochester, New York

For Twenty-Five Years, Manufacturers of Fire Alarm Signals Exclusively

Permission to reproduce this poster granted through the courtesy of the International Association of Fire Chiefs.

JOHNS-MANVILLE
RIGID ASBESTOS SHINGLES

JOHNS-MANVILLE CORPORATION, MADISON AVE. AT 41ST STREET, NEW YORK. BRANCHES IN ALL LARGE CITIES. FOR CANADA: CANADIAN JOHNS-MANVILLE CO., LTD., TORONTO



Outstanding Features of "UNIVERSAL"

MOTOR FIRE APPARATUS

Accessibility of Pumping Equipment

The entire pump may be removed without disturbing any other part. It is not necessary to enclose our pump as it is dry at all times, except when pumping. Booster tank is enclosed in hose body, which protects tank from injury.

Departure from the ordinary old fashioned Radiator

The shell of our Radiator is constructed of heavy cast aluminum. The core is of extra heavy material, reducing the possibility of leakage to a minimum. Over 625 square inches of frontal area assures a cool motor on the longest run. The core may be removed for repairs or replacement in a few moments by simply removing the top of the shell.

Note the sturdiness of the bumper

Being integral with the frame, it assures the utmost protection to the motor in case of accident.

Lack of obstructions over the hose body

This will be appreciated by firemen in loading the body with hose. The wider rear step provides ample room for several men.

THE name "Nott" has never been connected with cheap apparatus, and it is our intention always to maintain our standards of quality.

Quantity production and efficient manufacturing methods have made it possible for us to produce motor fire apparatus of highest quality at a lower price than is often asked. The "Universal" now brings complete modern fire protection within the reach of cities who have had to go without satisfactory equipment because of high prices.

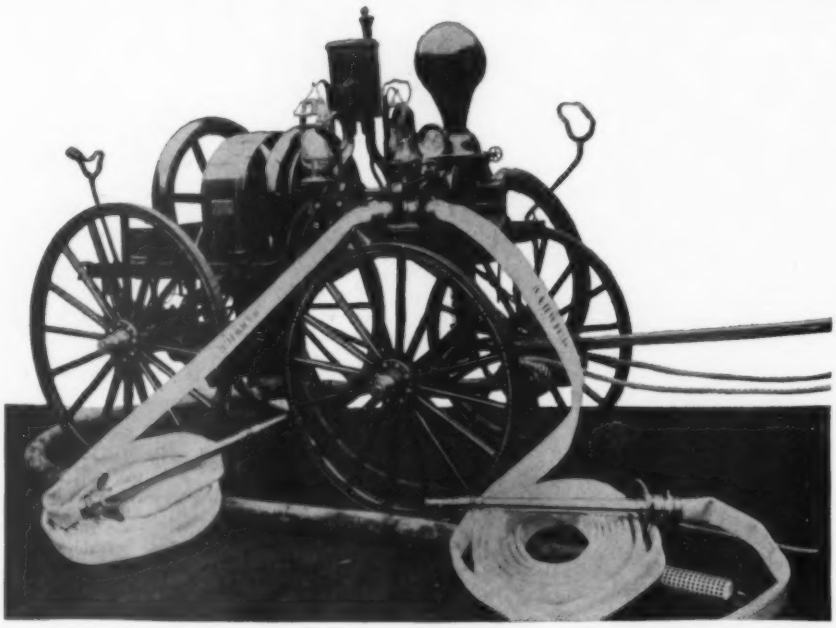
Write today for catalog and full particulars.

W. S. NOTT COMPANY

201 North 3rd St., Minneapolis, Minn.

ESTABLISHED 1879

Built on the Unit Renewal Plan



Many of These Old Waterous Pumpers Are Still in Service

Quite a step forward in those days to give up the steam boiler and engine—even before the days of electric ignition—no steaming up or waiting for pressure, was the principal advantage in changing to gasoline. We recall severe criticisms and much scoffing at using ***gasoline*** to put out a fire.

This engine was the forerunner of the present day highly refined motor propelled pumper—it was the first gasoline fire engine. Following this progressive step, Waterous designed and built the first motor-propelled pumper—the wonder of its day.

The same organization that then originated, invented and created are now putting the same advanced ideas into the present day Waterous Rotary Pump.

WATEROUS COMPANY

Saint Paul, Minnesota

Also Manufacturers of the "Waterous" Fire Hydrant

Established Waterous Dependable **1886**

Where Performance Counts

Your Ultimate Choice Will Be

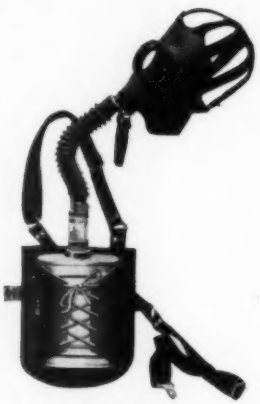
Mack

MACK TRUCKS, INC.

International Motor Company, 25 Broadway, New York City

One hundred and four direct MACK factory branches operate under the titles of: "MACK-INTERNATIONAL MOTOR TRUCK CORPORATION", "MACK MOTOR TRUCK COMPANY", or "MACK TRUCKS OF CANADA, LTD".

First Safety Men



Burrell All-Service Gas Mask

Benjamin Franklin
An Original Safety Man

Thousands of lives could have been saved had the Burrell All-Service Gas Mask and H-H Inhalator been available for accident prevention and resuscitation purposes when Benjamin Franklin founded the first fire department at Philadelphia in 1739.

The Burrell All-Service Gas Mask is officially approved by the United States Government for protection against carbon monoxide and all other poisonous gases and smoke.

The H-H Inhalator, endorsed by the Association of Police and Fire Surgeons and approved by the American Gas Association, is the most successful resuscitation device used today for administering carbogen (95% of oxygen and 5% carbon dioxide) to victims of asphyxia from gas, smoke, fumes, carbon monoxide, petroleum vapors, collapse and other causes.

Use the coupon to request information regarding these or any other M-S-A Safety Appliances.

[VISIT BOOTH NO. 42 AT THE CONVENTION]

Mine Safety Appliances Co.

Braddock Ave & Thomas Blvd. Pittsburgh, Pa.

H-H Inhalator in Use

MINE SAFETY APPLIANCES CO.
PITTSBURGH, PA.

Gentlemen:—Please send information regarding

.....

.....

.....

NAME.....

COMPANY.....

STREET.....

CITY..... STATE.....

With This Newest Foam Method

You buy only the chemicals—The use of the generator goes with it

THE FOMON GENERATOR

FOMON FIRE OUT

Embodying the latest development in the use of foam for fighting oil fires.

The use of two separate chemicals, proven by experience the most practical way of producing dependable foam, is a feature that brings the Fomon method a step in advance of anything on the market today. You no longer have to worry about deterioration—Fomon chemicals do not deteriorate. The Fomon Generator is simple in design and easy to operate, perfected down to the smallest detail.

Under our plan, you do not have to buy the Generator. The purchase of Fomon chemicals entitles you to the use of a generator as long as you maintain an adequate supply and use only Fomon chemicals. Thus the Fomon method of protection against oil fires is within the easiest possible reach of every fire department, large or small, and is a proposition no fire chief can afford to overlook.

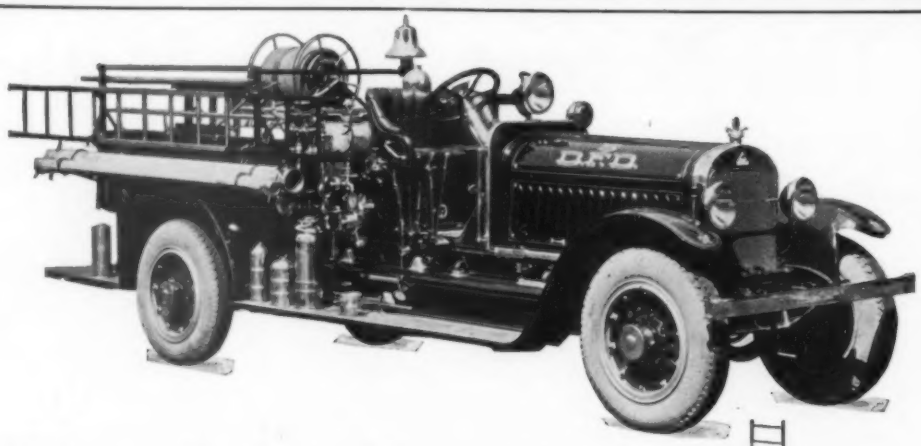
Write for full details on Fomon and how you can get it.

AMERICAN FOMON COMPANY

1005 Drexel Bldg., Philadelphia, Pa.

First application of Fomon foam to an oil blaze. (From an unretouched photograph.)

Foam blanket completely laid. Fire extinguished in a matter of seconds. (From an unretouched photograph.)



What Stutz Promises— Stutz *Does!*

The Past Since 1919, speaks for itself, with STUTZ apparatus giving unexcelled service in the many municipalities which wisely made it their selection.

The Present Working full force, building the SUPERIOR machine, and building it BETTER, strong in our determination to keep STUTZ where it belongs—at the head of the ranks—the machine others are imitating.

The Future WATCH! WAIT! WONDER! Very soon we promise to give to the Fire Fighting World NEWS worthwhile. You have seen our products—watched them perform under the most trying circumstances, "Weighed them in the balance and found them not wanting." No criticism has yet been made against STUTZ APPARATUS. No apologies ever offered or needed. The story we soon will tell does not so much concern our apparatus, but will be one to appeal to the far-sighted, the keen business men responsible for the expending of the taxpayers' money when their municipality buys Fire Apparatus.

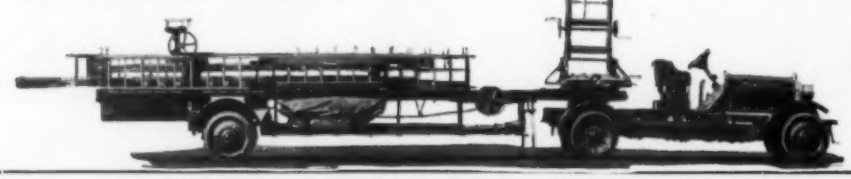
STUTZ Extends Greetings—And Again We Say:

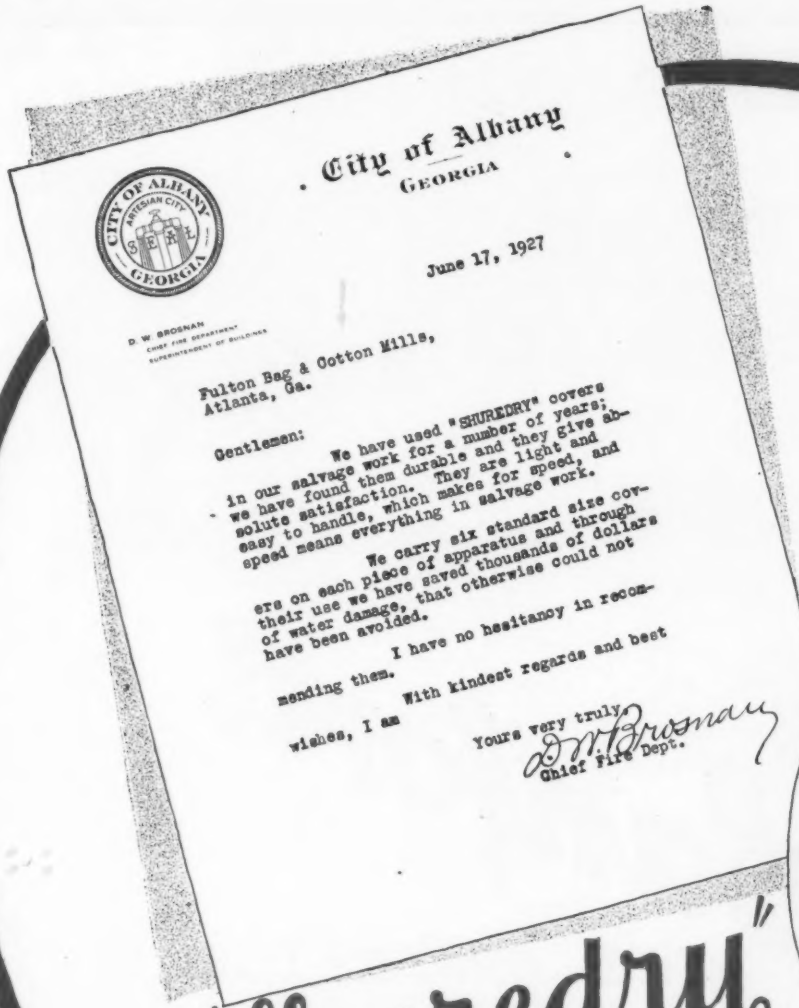
What STUTZ Promises, STUTZ Does!

There is a STUTZ for every need.

STUTZ FIRE ENGINE CO.

INDIANAPOLIS, IND.





City of Albany
GEORGIA

June 17, 1927

D. W. BROSNAN
CHIEF FIRE DEPARTMENT
SUPERINTENDENT OF BUILDINGS

Fulton Bag & Cotton Mills,
Atlanta, Ga.

Gentlemen:

We have used "SHUREDRY" covers in our salvage work for a number of years; we have found them durable and they give absolute satisfaction. They are light and easy to handle, which makes for speed, and speed means everything in salvage work.

We carry six standard size covers on each piece of apparatus and through their use we have saved thousands of dollars of water damage, that otherwise could not have been avoided.

I have no hesitancy in recommending them.

With kindest regards and best wishes, I am

Yours very truly,
D. W. Brosnan
Chief Fire Dept.

Fire Chief D. W. Brosnan, of the City of Albany, Ga., has established an outstanding record in preventing fire loss.

"Shuredry"
WATERPROOFED
Salvage Covers

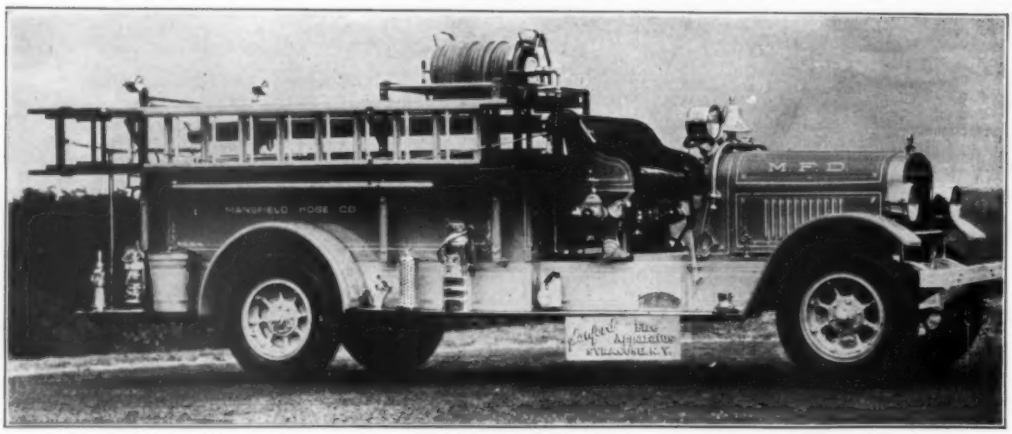
The lowest per-capita fire loss, during both 1925 and 1926, of any city in the world!

This remarkable record of the Albany, Ga., Fire Department, under the direction of Fire Chief D. W. Brosnan, makes Chief Brosnan's recommendation of Shuredry Waterproofed Salvage Covers particularly important. Write for Shuredry samples and prices.

Fulton Bag & Cotton Mills

ATLANTA NEW ORLEANS BROOKLYN ST. LOUIS DALLAS MINNEAPOLIS

The Greatest Value in America!



SANFORD SERVICE SATISFIES

Sanford

FIRE APPARATUS

Progressive Communities Everywhere are Placing "Sanford" on Guard

Stuyvesant Falls, N. Y.
Leonardo, N. J.
Cazenovia, N. Y.
Leicester, N. Y.
Mansfield, Pa.

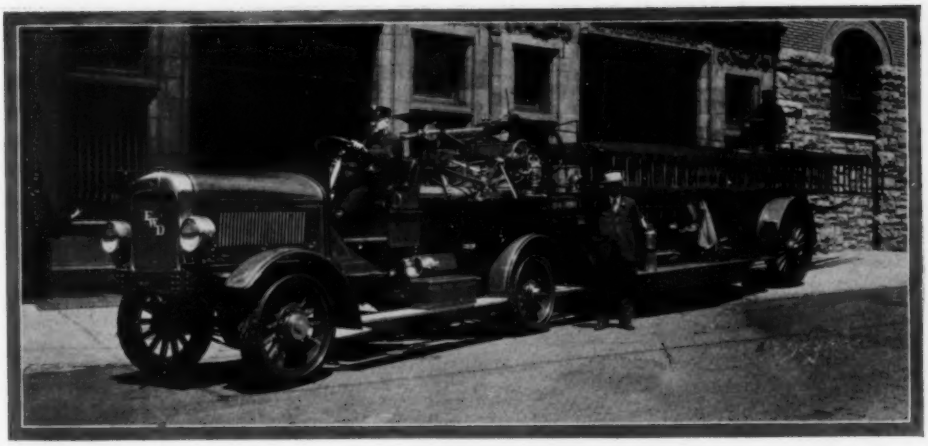
—and Scores of Others

Sanford Fire Apparatus is built like a battleship—rugged, durable and imposing in appearance. Modern engineering science has achieved efficiency and simplicity in operation. Sanford price makes it possible for Villages and Towns to secure adequate fire protection. ¶We will gladly, and without obligation, demonstrate to your community the Sanford qualities which have made it first choice in so many progressive communities everywhere.

See the Sanford before You Buy!

SANFORD MOTOR TRUCK CO.
SYRACUSE, N. Y., U. S. A.

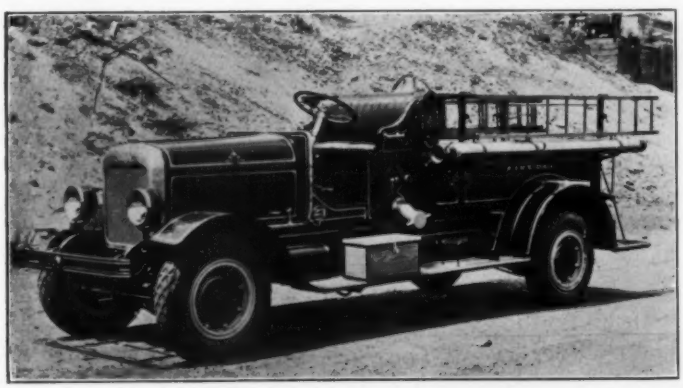
New York City Fire Department Orders Twenty FWD Tractors



FWD in New York City Fire Department

AFTER three very hard tests of an FWD fire tractor, the New York City Fire Department ordered twenty of them. During these tests the tractor was fully equipped with trailer and the usual ladders. The outfit weighed 22,400 pounds in all, 4700 pounds more than the requirements specified. The truck was driven about the city on a 20-mile run, through traffic, this way, that way, and up steep grades. It was required that the tractor make the run in 50 minutes. The FWD made it in 44. It was then driven up the well known Fort George Hill which has a grade of 11%. The time allowed was 3 minutes, 30 seconds. The FWD did it in 1 minute, 55 seconds. It was then driven up 187th Street Hill which has a grade of 14%. The time allowed was 50 seconds. The FWD did it in 27.

The FWD passed all the tests with flying colors. These tests, however, are not the first experience the N. Y. Fire Dept. has had with FWDs; for years several FWDs have been used by the Department, and their performance record was largely responsible for this latest purchase.



FWD in Milwaukee Fire Department

The FWDs ordered are of the tractor type, six-cylinder, four-wheel driven, of course, with solid tires. The picture above shows one which is already in service.

MILWAUKEE FIRE DEPARTMENT ADOPTS FWD PRINCIPLE AND PURCHASES FWD TRUCKS

Milwaukee Fire Department is also purchasing FWD fire equipment. They also decided to use the FWD after giving it an extremely severe test. The truck was driven over the worst kind of roads, over a dumping ground and through a street that was almost nothing but mud,—the truck wheeled through it hub deep. The FWD didn't stay in the mud but it *did* stay in the Milwaukee Fire Department. Right now the FWD Company is supplying six 750 gallon units.

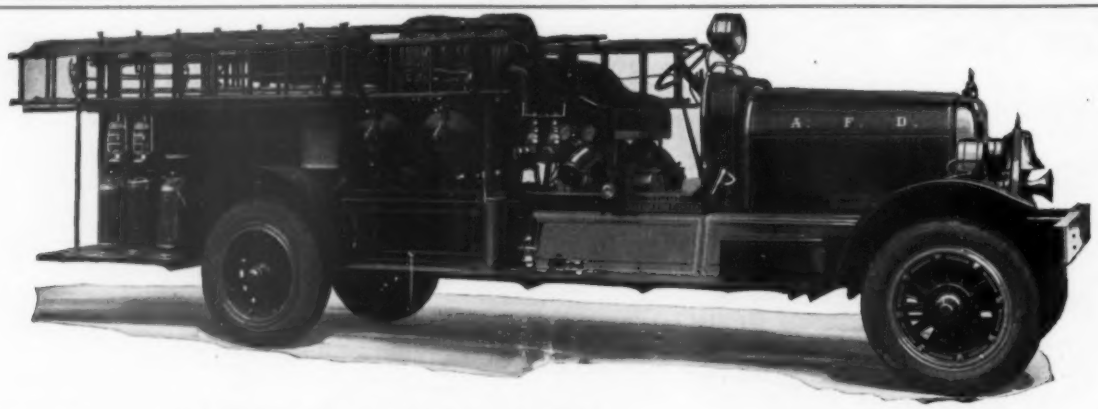
Why Fire Departments Like the FWD

Fire trucks must get to the fire; that's what they are for. The FWD speeds along at any rate you may select up to fifty miles per hour. It travels around corners without skidding, for four wheels are gripping the ground; FWD trucks are safe trucks. If you must stop quickly, step on the brake lever; the four wheels grip the road again —this time holding back. You stop mighty suddenly. Snow? Mud? The FWD plows right through. In fact the FWD has gained a reputation, through years of unfailing service, for getting to the fire regardless of road conditions.

The FWD Company has been building trucks since 1910. FWD fire trucks are used the world over. If you want more information about fire apparatus that is noted for safety, power, and year around service, just say so on a postal card. Better do it now.

THE FOUR WHEEL DRIVE AUTO COMPANY

CLINTONVILLE WISCONSIN



The DELUGE Master Fire Fighter

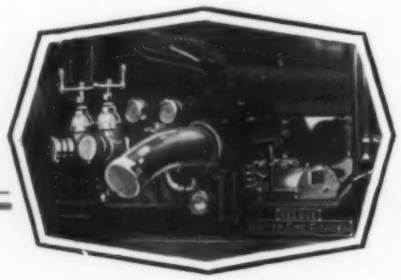
ONE of the most modern and completely equipped fire trucks of this day—justifying in appearance and in action its trade name, The Master Fire Fighter.

In building fire apparatus we have devoted a great deal of time and energy to the development of a high grade, dependable fire truck, paying special attention to the designing of a rotary pump. After all, it's the pump that gets the hard knocks and DELUGE is built to stand them.

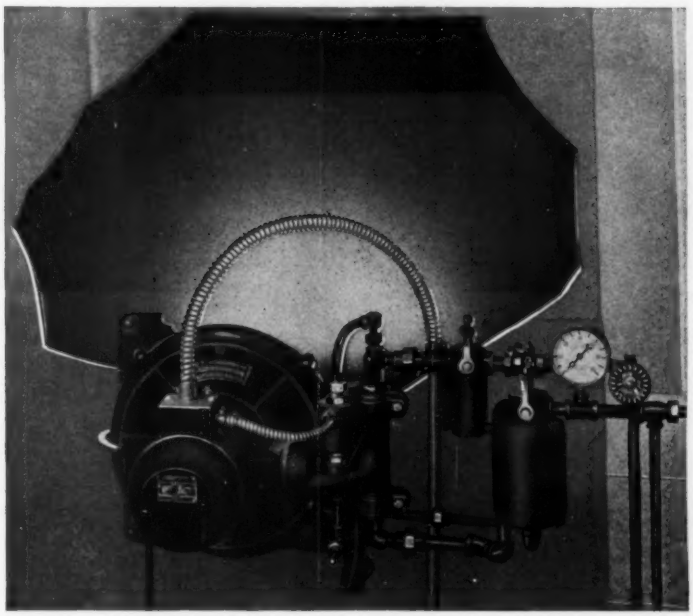
Any decrease in efficiency or capacity can be regained, easily and quickly, by taking up all wear on the impellers and impeller shoes. This feature is exclusive with DELUGE Pumps. Time and hard service makes little or no inroad into the efficiency of DELUGE.

Before making a purchase of a fire truck, have an experienced engineer (your own or one of ours) explain the features that make DELUGE Master Fire Fighters the outstanding fire trucks of this day. Make a close comparison in pump, in motor, in chassis and in all details of manufacture, finish, painting and completeness of fire fighting equipment.

THE PROSPECT FIRE ENGINE CO., Prospect, Ohio



DELUGE—the Double Life Rotary Fire Pump



Gold medal awarded to Johnson Oil Burners at Sesquicentennial for excellence of workmanship and completeness of design.

FIRE...when and where *you* want it

From underground outside tank to flame, the JOHNSON ROTARY OIL BURNER is simple and *safe*—providing heat *only* when and where you want it.

Automatically and thermostatically controlled throughout, the JOHNSON is proof against any fire hazard, including those arising from accident, wear, faulty ignition, overheating, or "act of Providence". And it eliminates the dangerous "human element".

For your *own* home—for the homes of those who entrust decisions as to oil burner installation to your judgment—the JOHNSON furnishes clean, efficient, economical heat—year in, year out.

Write for literature about the JOHNSON—an oil burner you can safely use and recommend.

Listed as Standard by Underwriters Laboratories

S. T. JOHNSON CO.

OIL BURNERS

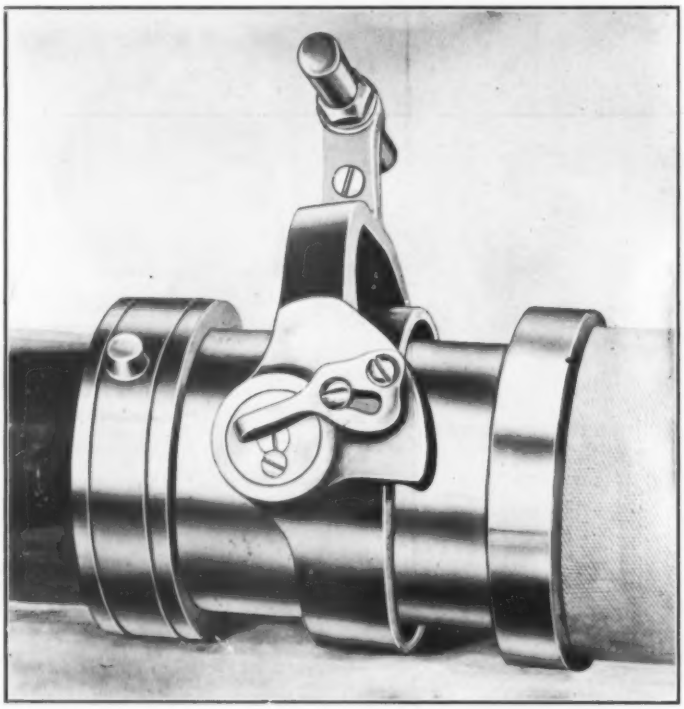
TRADE MARK REGISTERED

Main Office and Factory, 940-950 Arlington Ave., Oakland, Calif.

Factory Branch Offices:
San Francisco Sacramento Philadelphia

Distributors and Dealers throughout the United States and in Foreign Countries

4427



Why Thread Suction Hose?

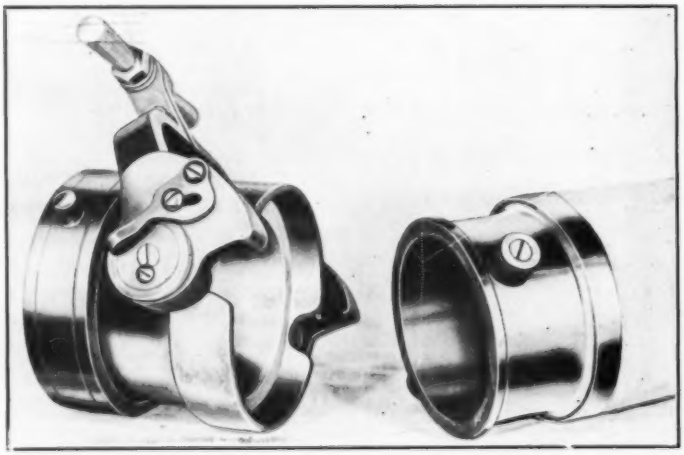
New Threadless Coupling Connects Instantly

Here is the last word in Fire Equipment Development. The NATIONAL STANDARD THREADLESS COUPLING pictured here represents the greatest modern improvement in coupling design. It permits an instantaneous hookup that is perfectly adaptable to either hard or soft suction apparatus. It revolutionizes fire fighting methods. Note shift handle—Pull it and a perfect pressure-proof connection is instantly guaranteed—Push it and the coupling is disconnected.

Think what this simple, speedy operation means in time saving, as well as the rush service it assures when a quick getaway often means the safety of both men and apparatus. No modern fire department can now justify the useless waste of time, apparatus and money that invariably accompanies the use of threaded couplings. This new invention eliminates every coupling defect.

The New Threadless Coupling Never Fails!

Here is the National Standard Threadless Coupling disconnected by a push of the handle. A Shift that any fireman can operate and yet so positive a connection that leakage under any pressure is impossible. Note the simplicity of construction—There are no delicate parts to get out of order—No gasket wear or leak—No replacements—The National is guaranteed to give years of trouble-free service.



SPECIAL FEATURES

Sturdy Bronze Construction outlasts the apparatus—Simple to install—Any fireman can operate it—Eliminates delay—No lining up with hydrant—No threading or misthreading—No wrenches—No gasket-wear—Cannot leak, freeze or jam—No Thawing necessary—Guarantees positive, speedy connection and disconnection. Note friction proof roller lugs.

WRITE US

For descriptive literature on this remarkable new invention, as well as complete data on sizes, installment and service-tests.

With a spanner wrench, any fireman can install the National on any pumper in 15 minutes.

GUARANTEED

The National Standard Threadless Coupling has been thoroughly tested under actual fire fighting conditions. Departments that equipped with Nationals five years ago report perfect satisfaction throughout all that time without a sign of wear or leak in this speedy, shift-connecting coupling. The National Unit is backed by years of exhaustive tests, and is manufactured under the supervision of experts in the construction of fire fighting equipment. The finest of materials combined with master workmanship make this new unit the outstanding feature of modern scientific fire fighting equipment.

Manufactured exclusively under patent rights by

NATIONAL STANDARD THREADLESS COUPLING CORP.,

Manufacturers and Distributors of Threadless Couplings for Fire Engines, Oil Tanks and Trucks, Oilhose, etc.

Executive Office: 215-217 BEACH 122ND STREET, ROCKAWAY PARK, N. Y.

DEPENDABILITY

BACK of the acknowledged dependability of Boyer Quality Fire Apparatus, there are 41 years' experience in building powerful, high grade equipment. The whole-hearted and lasting enthusiasm for our equipment as expressed in letter and by word of mouth from the thousands of Fire Chiefs who use it, is a monument of evidence of the sterling character of Boyer-built Apparatus. ¶ You may be interested in our plan of financing which has enabled hundreds of cities, villages and towns the country over to acquire plenty of equipment to serve their needs adequately.

6500 of the Famous Boyer Sealed-Cartridge Chemical Tanks in Steady Operation—and Never a Failure

BOYER

Fire Apparatus Co.

Logansport, Indiana

FORTIFY FOR FIRE FIGHTING

Pumping for Tall Buildings

Of course there is water in the offices at the top of the Singer Building in New York—Over 600 feet high.

Daytime they use it for washing, drinking and other purposes.

Night-time they use it for cleaning. Every minute of the day and night, every day in the year, there must be water at the top of this sky scraper.

Away down under the ground, in one of New York City's finest "Show" Power Plants, the Singer, are the Pumps—Electric Driven Northern Rotaries.

The "High Rise" pump that is now on the job (a Northern Rotary) has pumped continuously for 400 days against 300 pounds pressure; without any decrease in capacity—without any repairs—and at only a fraction of the power consumption of the steam pump it displaced.

Let us figure the probable life of such a Northern Rotary Fire Pump in average city fire service. In 400 days there are 9,600 hours. Allowing 100 hours of pumping per year, the pump would have been operating 96 years and still going strong. Driven by a gasoline engine—working at a rate equivalent to 40 miles per hour, the engine would have to give 384,000 miles.

But fire service pressure averages about 100 pounds. This Singer Building High Rise Pump operates against a constant pressure of 300 pounds.

When buying your next pumper, insist on a Northern Rotary—used by 13 Manufacturers of Fire Apparatus in the United States—and by many foreign companies.

Northern Pumps are doing big things in the industrial world—performing exacting services—establishing records for dependability, durability and efficiency.

Many of the world's largest users of pumps buy Northerns regularly. Northern Pump ads will tell you interesting impressive provable facts of the things that are being done by Northern Pumps that no other Rotary fire pump has done.

This is one of a series of such ads.

NORTHERN ROTARY PUMPS
"MORE GALLONS PER HORSE POWER"

NORTHERN FIRE APPARATUS CO.
902—18th Ave. N. E.
MINNEAPOLIS, MINN.

Be Sure That Your New Badges Are

BRAXMAR

No. 606-F

This New Fire Chiefs' Assn. Badge Will Be On Sale At the Portland Convention.

No. 602-F

Braxmar Badges

Have been the recognized standard in fire department circles ever since the

establishment of this pioneer company in 1879—

"48 years of conscientious service to the field."

Our friends are everywhere—we have equipped departments from coast to coast.

More than 900 Designs

are available for your selection in gold, silver, gold-filled, gold plate, nickel, etc., for fire departments, police and other public officials and employees.

Be sure to have our latest illustrated catalog on hand, and write for prices on your department's requirements, both on individual badges and larger lots.

DESIGNED, MANUFACTURED AND SOLD BY

C. G. BRAXMAR CO.

242 West 55th St., New York

(Formerly 10 Maiden Lane)

The Journal of the Fire Protection Profession Since 1877

MEMBER
Audit Bureau of Circulations
Assoc. Business Papers, Inc.

FIRE ENGINEERING

A consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER

Published Every Other Wednesday

SUBSCRIPTION PRICE
U. S. $3 a year; Canada $3.50
Foreign $4; Single copies, 25c.

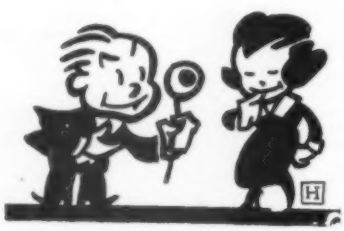
Issued at Lyon Block, Albany, N. Y.
by CASE-SHEPPERD-MANN PUBLISHING CORP.
Also publishers of "Water Works Engineering," Technical Books, etc.

Executive, Editorial, Advertising and Subscription Offices, 225 West 34th Street, New York City
All communications, including Editorial, Advertising and Subscription, can be directed to either of the above addresses.

KARL M. MANN, President and Advertising Director
FRED SHEPPERD, Managing Editor
I. HERBERT CASE, Vice-Pres. and General Manager
H. S. ESSEX, Advertising Manager; ROBERT H. LOCKWOOD, Editor; N. N. WOLPERT, Asst. Editor
HAROLD T. MURRAY, Western Manager, 30 N. Michigan Ave., Chicago, Ill. Telephone: Franklin 0138.

EDITORIAL ADVISORY BOARD

JOHN KENLON, Chief, New York Fire Dept., Founder of New York Fire College
JOHN C. MORAN, Chief, Fire Department Hartford, Conn.
GEO. J. KUSS, Former Deputy Chief N. Y. F. D.; Lecturer on Fire Fighting, Delehanty Institute, N. Y.
A. A. BELL, Chief of Fire Brigades and Engineer "America Fore" Group of Fire Insurance Cos.



It Does Our Hearts Good

YES sir! It gives us genuine pleasure to present to you this issue of FIRE ENGINEERING—unquestionably the finest Convention Number we have ever gotten out for the International Association of Fire Chiefs. And that's saying something, too, when you consider that this magazine has been at it for fifty long years, practically since the International came into existence.

¶ To keep doing things better and better with the passing of time has always been a religion with us which has its clearest reflection in a real record of achievement.

¶ We feel, after all, as a writer once said: "A great deal of the joy of life consists in doing perfectly, or at least to the best of one's ability, everything which he attempts to do. There is a sense of satisfaction, a pride in surveying such a work—a work which is rounded, full, exact, complete in all its parts. It is this conscientious completeness that turns work into art."

¶ And so we hope to continue on!

The Publishers

CONTENTS

JULY 27, 1927

VOL. LXXX No. 15

Portland Fire Bureau—A Live Organization (Portraits-Illustrated) 761
History, Past and Present of the Convention City's Fire Department.

Fighting Gas Well and Oil Fires (Illustrated) 763
Some Practical Suggestions Which Have Proven Their Worth in Practice.

What Chance Have the Firemen? (Illustrated) 765
Automobiles Add to Danger of Fire Service.

Big Crop of Amusement Park Fires (Illustrated) 767
Flimsy Construction Responsible for Spread in Most Cases.

Progress of Hose Thread Standardization, by P. E. Charnock 769
What Has Been Accomplished Along This Line in New England.

Smoky Fire Knocks Out New York Firemen, by Wm. Jerome Daly (Illustrated) 771
Two Big Mercantile Fires in New York City.

How Albany, Ga., Won the Fire Prevention Award (Illustrated) 773
Chief Brosnan Tells of His Methods Which Won This Distinction for His City.

Wholesale Produce Fire Well Handled (Illustrated) ... 775
Confining the Fire to Single Building Reflects Much Credit on Department.

Fire Department Taboos Floating Fire Trap, by Battalion Chief R. B. Rogers 777
Legal Battle Won by Seattle Fire Marshal.

Recent Important Fires Specially Reported (Illustrated) 779
Lives Lost in Big Montgomery, Ala., Fire—Burnings of the Week.

With the Editor 781
Comments on Current Events and Live Topics by Our Editorial Staff.

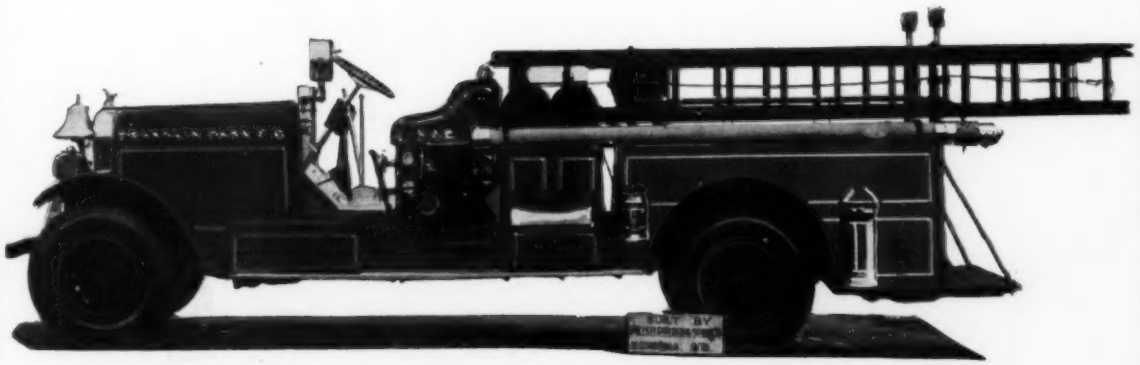
Portrait Section 783
Photograph of Leading Figures in the Fire Department Field.

Questions and Answers 803
Replies to Questions on All Manner of Subjects of Fire Fighting and Fire Protection.

Another Newly Developed Foam System (Illustrated) 807
Employs Two Ejectors and Uses Two Powders.

Contents of this issue copyrighted, 1927, by Case-Shepperd-Mann Publishing Corp., 225 W. 34th St., New York City
Vol. LXXX, No. 15, July 27, 1927. Entered as second class matter at the Post Office, Albany, N. Y., January 29, 1926, under the Act of March 3, 1879.

The "Pirsch-Standard" 750 Gallon Pumper



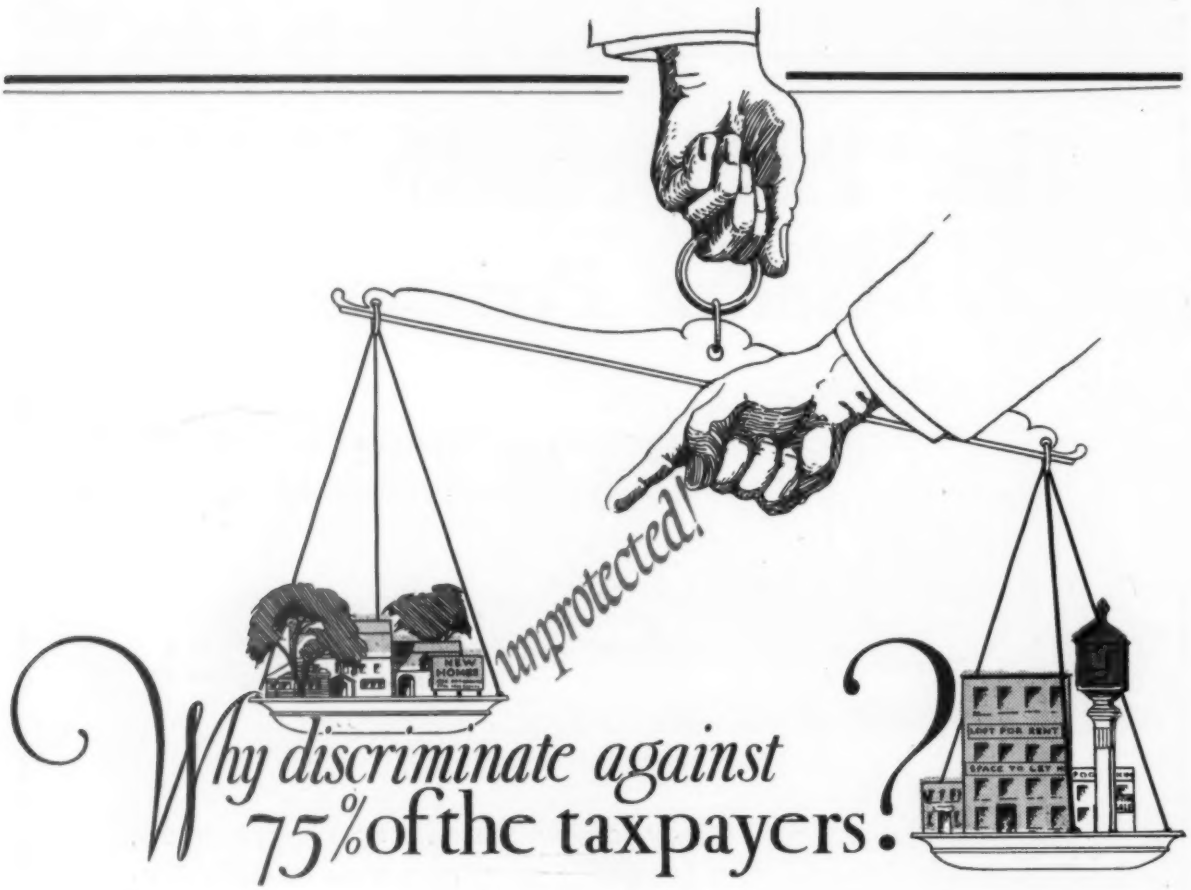
The "Pirsch-Standard" 750-gallon pumper is a standard, modern, high grade product in every detail of design and construction. Designed, engineered and built by us to pump 750 gallons of water. It passed the National Board of Fire Underwriters twelve-hour endurance test with a perfect score, using only 65% of the motor peak speed. This means real "reserve" at capacity. In unofficial tests this pumper has actually delivered over 1000 gallons at 120 pounds net pump pressure.

If you want information on "Modern" apparatus let us tell you about our "Pirsch-Special" 500-gallon, "Pirsch-Intermediate" 600-gallon and "Pirsch-Standard" 750-gallon pumpers. All three have been passed by National Board of Underwriters in twelve-hour tests.

PETER PIRSCH & SONS CO.

Kenosha, Wis.

New York, N. Y. **11 Moore St.**



Why discriminate against 75% of the taxpayers?

Give a number to every street corner in your city which has no fire alarm box. Consider such corners as being equipped with "Phantom Boxes.' When a telephone alarm is received transmit that number.

A YEARLY PROGRAM

' By installing a definite number of boxes each year in the more important locations of "Phantom Boxes," you will soon have adequate box protection and the assurance that adequate protection will be maintained as the city grows.

Convenience—not necessity—in many cities, determines where the fire alarm boxes shall go. Boxes are installed not where they are needed but wherever the circuits may happen to run.

Frequently the circuits run along only a few of what were once the main streets of the city, while the newly developed sections are totally unprotected. The unsoundness of this practice can be seen by comparing the value of property in newly developed sections with the depreciated property in the older sections.

Accordingly, the taxpayers in the new development may be paying more taxes than those in the older sections. Is it fair, therefore, to discriminate against them?

The remedy for such a situation rests in the "Phantom" Box Plan and the yearly installation of a definite number of fire alarm boxes, which brings about a fair and equitable distribution.

The Gamewell Company

Newton Upper Falls, Mass.

"A Box A Block"

FIRE ENGINEERING

(A Consolidation of Fire and Water Engineering and The Fire Engineer)

The Journal of the Fire Protection Profession

VOLUME LXXX JULY 27, 1927 NUMBER 15

Portland Fire Bureau—a Live Organization

History, Past and Present, of the Convention City's Fire Department—Well Disciplined and Efficient—the Fire Prevention Division

THE City of Portland, Ore., was settled in 1845 and incorporated as a city during the year 1851, and had no fire department except a bucket brigade until 1870, when a volunteer fire department was organized. This lasted until January 1, 1883. It was then organized as a call department. The men responded to the alarm by a bell signal. The call days lasted from 1883 to June 1, 1904. The department was organized as a full paid unit in 1904.

Fire Chief Lee G. Holden, of Portland, Who Will Be the Host of the Convention

James Dillane, 2nd Asst. Chief, Who Is Assisting Chief Herring on the Exhibits

The First Chief of Portland

The first chief of the old department was Tom Jordan. Chief Campbell was the first chief of the paid department.

Civil service was enacted by legislature in 1903. This placed the entire fire and police departments under civil service, with the exception of the chief of police.

Many Changes in Post of Fire Chief

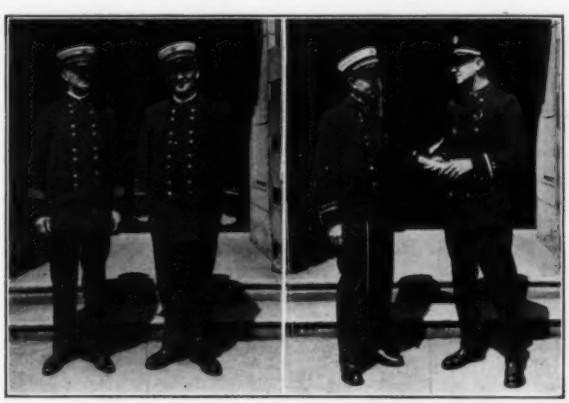
The first chief of the volunteer fire department, Tom Jordan, served from January 1, 1883 to July 1, 1884. Harry Morgan was next appointed as fire chief, serving in that capacity from 1884 to 1892. At that time the Portland Fire Department was on a partially paid basis, each company having a captain and driver who received approximately $75 per month for their services. The office of chief at that time was an honorary position. As the fire department was then buffeted by the various political parties, so again a change came in the person of Robert Holman who acted as chief from 1892 to 1893, when the political tide again changed and Joseph Buchtel was given the chiefship for a period of two years.

Heroic Death of Chief Campbell

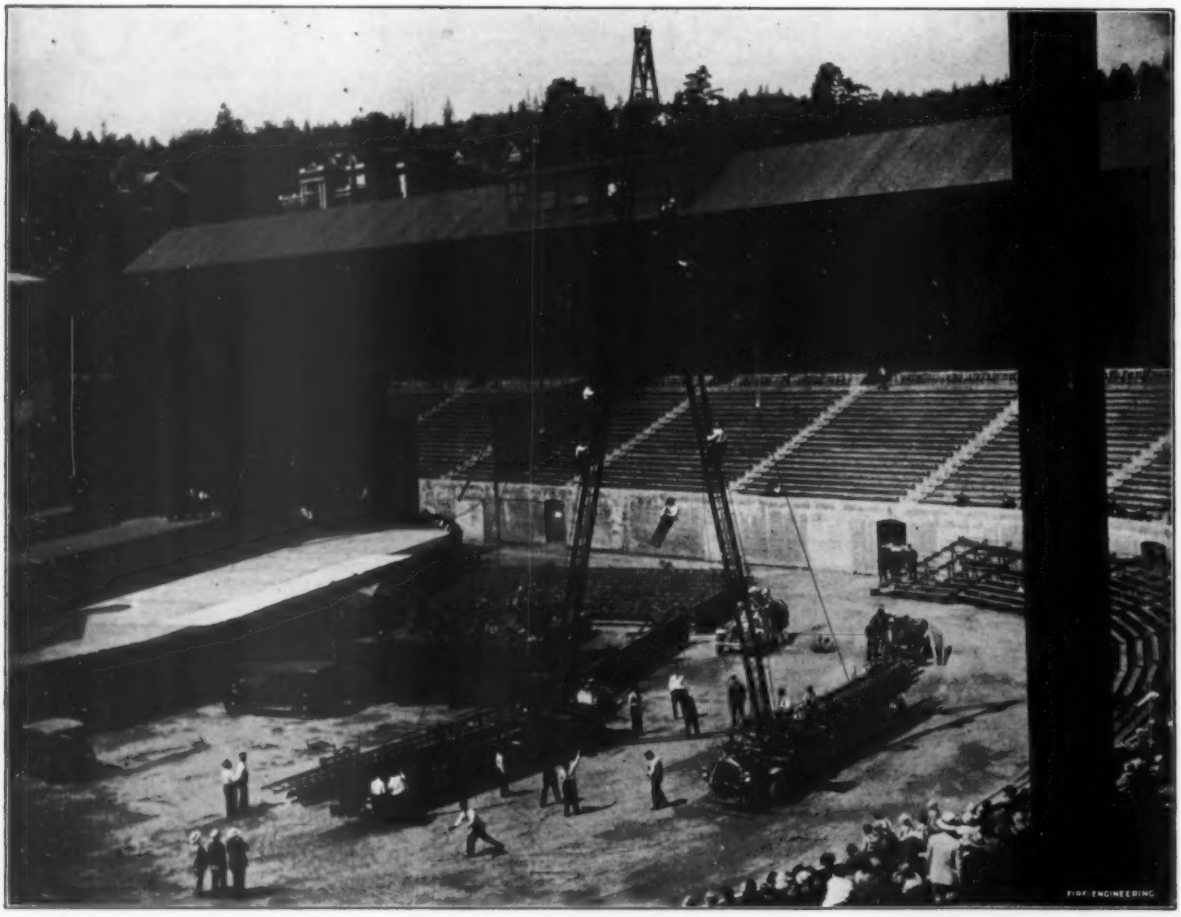
Next came David Campbell as chief from 1895 to 1896, when again the political tide changed and he was succeeded by Tenis DeBois from 1896 to 1898. During the year of 1898 a change was made again and David Campbell was re-appointed as chief, serving as such until 1911, when he met his death so heroically at the Union Oil Company's fire on June 26, 1911. The fire fighters of our city are erecting a gigantic memorial in honor of Ex-Chief David Campbell and all of the Portland fire-fighters killed in the line of active duty.

Chief Campbell was succeeded by Chief B. F. Dowell, who held that position until his retirement in 1920, when he was followed by John E. Young, who also retired during the year of 1923, when our present fire chief, Lee C. Holden, assumed active charge of the Portland Fire Department.

In 1904 at the organization of the paid



Left—Battalion Chief Harry Johnson and Battalion Chief Wm. R. Heath, Mt. Hood Loop Trip and Hotel and Baggage Committee Chairmen. Right—Battalion Chief Fred Roberts and Captain Edw. Boatright, Local Publicity Committee



Exhibition Drill of the Portland, Ore., Fire Department, With Two 85-Foot Aerial Ladders Fully Extended, and Fireman Descending on Life Line Suspended Between Them

department there were 12 companies in the department, consisting of 4 hose companies, 5 truck companies and 3 chemical companies, with approximately 10 men for each company, excepting the chemical companies with three men.

Present Organization of Fire Bureau

The present organization of the Portland Fire Bureau includes:

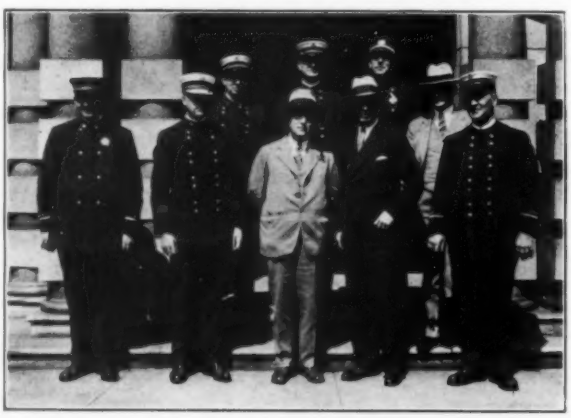
1—Chief Engineer.	1—Instrument Maker.
1—1st Ass't Chief Engineer.	1—Blacksmith.
1—2nd Ass't. Chief Engineer.	1—Supply Driver.
3—Battalion Chiefs.	1—Hydrant Inspector.
1—Chief Clerk.	1—Hydrant Repair Man.
1—Stenographer.	2—Fire Boat Masters.
1—Superintendent of Fire Alarm Telegraph	2—Fire Boat Pilots.
	36—Captains, Sr.
1—Chief Operator.	47—Captains, Sr.
6—Operators.	28—Engineers.
3—Linemen.	28—Ass't. Engineers.
1—Master Mechanic.	318—Hosemen.
1—Hydrantman.	Total 487 Employees.

The Equipment of the Bureau

The list of equipment of the bureau is as follows:

Houses, Single	27
Houses, Double	7
Houses, not occupied as Fire Stations	3
Fire Boats	2
Tractor drawn Steamer	1
Squad Wagon	1
Turrett & Hose	2
Turrett-Hose & Chemical	3
Straight Hose	1
Hose & Chemical	12
Hose & Pumper	13
Hose, Pump & Chemical	6

(*Continued on page* 811)



Left to Right: Front Row—Battalion Chief C. O. Haines, Fire Marshal Edw. Grenfell, Commissioner C. A. Bigelow, Finance Committee Chairman Ira F. Powers, and Battalion Chief Wm. D. Heath. Rear Row—Battalion Chief Fred. W. Roberts, Battalion Chief Harry Johnson, and Battalion Chief Willis Smith

Where Haste Saves Waste. Workmen Building Up Dikes Around Burning Oil Tank to Prevent Spread of Fire to Surrounding Property.

Fighting Gas Well and Oil Fires

Some Practical Suggestions Which Have Proven Their Worth in Practice—Effective Method of Handling the Gas Well Fire

GAS well and oil fires are closely linked. As a matter of fact, many oil field fires start with the ignition of gas blown off from the oil wells. Hence what may be said about handling the fire in the gas well will also be of value to those interested in oil fires.

For many years gas well fires defied the forces attempting to extinguish them. But as time passed, and more engineers gave attention to the subject of gas well fire extinguishment, methods were devised and which are now proving satisfactory. They are not entirely new, but the methods of application differ.

The Gas Well Fire

Gas is discharged from oil wells and gas wells under very high pressure. In many cases it carries with it fine particles of crude oil. So great is the pressure that a jet of gas and atomized oil may be thrown several hundred feet in the air.

When such a well takes fire, intense heat is generated, so much so that it is dangerous for men to operate at close range. Such fires are very spectacular at night, and in many cases are visible for a hundred miles.

The great heat, the roar produced by the burning gas well, and in general the tremenduous power it represents at first awed those working around such wells with a result that in the early days many wells were permitted to burn for weeks and even months before being extinguished.

Nowadays, it is a matter of but a few days until the average gas well fire is extinguished.

Steam Employed

One of the methods used for extinguishing gas well fires is the application of steam. Steam, when sent in the form of jets under high pressure against a gas well fire may be of sufficient effectiveness to extinguish the fire by smothering it. The steam also has a tendency to break up the continuity of the gas flame.

To provide sufficient steam, it is frequently necessary to bring into play a large bank of portable boilers. These boilers are usually fired by oil and are connected to feed into pipe lines directed at proper points to produce desired extinguishing effects.

In one of the illustrations herewith are shown seven portable boilers all lined up and ready to operate. These were used in extinguishing a fire recently in one of the southwestern states.

Naturally it requires quite a force of men to operate these boilers, and together with other men required in fire fighting operations, quite a large group is brought together to extinguish the average gas fire. This represents quite a big cost, but it is necessary in view of the fact that immense quantities of gas would otherwise

be lost through burning if a gas well were permitted to remain ablaze any length of time.

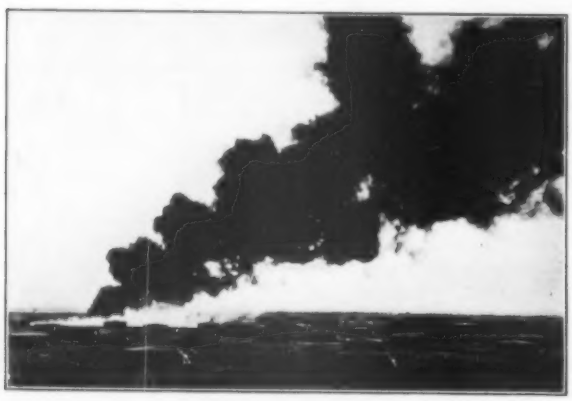
Using Explosives

Another method of extinguishing the gas well fire is by means of explosives. The usual method of employing explosives is to rig up three derricks and interconnect them with cables which are so arranged that

Raising the Steel Stack Over Burning Gas Well. This Is an Effective Method for Handling Gas Well Fires of Moderate Size.

they may be played in or out as desired. When the three cables are laid out they are brought to a common point of connection, and at this point of connection is attached a parcel of dynamite, connected with wires for electrical detonation.

When the stage is all set, the cables are drawn in at each of the three derricks so as to bring the explosive directly adjacent to the gas stream. When it is brought close to the ground and adjacent to the gas, it is fired by the electric fuse and the concussion breaks up the stream of gas and blows out the fire.



Interesting Picture of a Tank Farm Fire. Note How Fire Is Spreading to Adjacent Tanks Through Flow of Burning Oil. Main Fire Is Indicated by Heavy Black Smoke While Spreading Fire Is Shown by White Smoke Just Below It.

While gas continues to flow from the well, it is not always ablaze and can therefore be readily handled.

Using a Stack

Another method which has been used with great success, particularly in the moderate size gas well fire, is the portable stack built in the form of a funnel at the lower end. This device is shown in position over a gas well in one of the illustrations herewith.

The method of using this device is as follows:

The stack, or pipe, is attached to cables from two or three derricks and is gradually snaked toward the burning well, with the funnel foremost. When brought up alongside of the well, the stack is raised to a vertical position through the use of guy wires and cables from the derricks. In this manner it is brought up over the well and carries the gas from the port at the ground to the top of the stack where it continues to burn. Actually what is accomplished is to raise the point of combustion well above the ground so that men may get beneath the flame and near the well where they can operate. When the stack is in a vertical position, and everything is ready to proceed, men approach the stack and anchor it properly to the ground. The stack is fitted with a valve whereby the gas can be cut off temporarily. When the stack is all set, the value is turned and for a moment or two the rush of gas is arrested. This gives time for the gas above the stack to be completely burned and fire thus extinguished.

Oil Tank Fires

About the only effective agent so far found for handling oil tank fires is foam. This is produced in various methods as described in previous issues of this journal, such as by use of mixing chambers and pump-

Battery of Boilers Lined Up to Provide Steam for Extinguishing Gas Well Fire.

ing two solutions to a point near the tank where they are brought together and foam thereby resulting. Or powder is used directly in a so-called foam "generator" which produces foam at a convenient point for discharge into the oil tanks.

Occasionally on a tank farm where satisfactory equipment is not at hand a fire occurs. Then it is a question of emptying the exposed tank after keeping the burning tank cooled, if water is available.

If not, great dependance has to be placed upon the dikes.

In many cases the dikes are not in a very good state of repair and when a fire occurs there is a rush to get them into shape. Such a condition is shown in the illustration herewith. Men are working in close proximity to a burning tank in order to get a dike properly banked to prevent the spread of fire by the flow of burning oil.

When a tank, while burning, lets go, there is a rush for safety and there is no time to dally. For that reason the maximum number of men are usually brought into operation at the first sign of fire to get the dikes again into shape, if they are not already properly maintained.

Tribute Paid to John Drew by Firemen—At the annual dinner given by East Hampton, L. I., to the volunteer fire department, tribute was paid to John Drew, the late noted American actor, by the volunteer firemen. It was the first of the dinners which Mr. Drew missed in seventeen years, and he was a resident of East Hampton for the past thirty years. Tribute was also paid to the deceased by Irwin S. Cobb.

What Chance Have the Firemen?

The Increasing Number of Automobiles in Use and the Desire to Follow Apparatus Adds to Dangers of the Fire Service

WHEN the fire department depended upon the horse for motive power, the problems that confronted the men on the apparatus were far simpler than the conditions that exist today because of the use of the automobile and the electric trolley. This article indicates the result of present day habits.

Who has the right of way?

There is scarcely a fire department in the United States of any size that has not had an accident that is the direct result of either a motorman or an automobile driver believing that they had time to reach a certain spot before the oncoming fire apparatus. Some cities have been less fortunate than others, and many pieces of apparatus have been delegated to the junk pile.

Within a few weeks, Elmira, N. Y., has had three major smash-ups, each of which could have been prevented by the exercise of a small amount of common sense on the part of the ones who are given the privilege by the state to drive automobiles.

Parking automobiles along both sides of the street with the control mechanism locked also adds to the trying conditions.

In one instance a 750-gallon pumper was answering an alarm from the down town section of the city and was traveling through a narrow thoroughfare which was lined on both sides with parked automobiles. At a point where one street merges into an other at a very sharp angle, the asphalt pavement had just been sprinkled. Swerving into the road, the driver ot the fire apparatus felt his machine skidding and applied his brakes, but too late. The machine crashed into a parked car damaging the front fender and running board, spring, headlight and axle of the apparatus. The fire itself was of minor consequence and could have been extinguished with a chemical tank.

Some Bad Accidents in Elmira, N. Y.

Another accident in Elmira occurred when a 750-gallon pumper went to answer a fire alarm caused by a man leaving a lighted pipe in his coat pocket. With the siren blowing and the bell clanging, the apparatus swung around a corner and was confronted by an oncoming street car. The motorman had ample time in which to stop the car but evidently he lost his head. The driver of the fire apparatus saw that a head-on collision was inevitable but he could not pull up to the curb because of the large number of cars that were parked there. In the fraction of a section he discovered a space to which he could direct the pumper. All that he could do was to nose in the front end. The trolley car came on and hit the pumper opposite the pump outlets. Because of the accident, it was necessary to remove the lieutenant to the hospital and to completely rebuild the apparatus.

The worst of the series of three took place when a company was responding to a "dump" fire which was ordinarily outside of the usual run. The driver proceeded to the fire at a good rate of speed when suddenly there swerved into the path of the apparatus, a woman driving a sedan. She became confused when she saw the oncoming fire company. In order to avoid a head-on collision, the driver of the apparatus directed his machine to the curb and struck a tree head-on. The truck was completely demolished and it was necessary to purchase a new one. But the major result was the resulting injury to three of the firemen, one of whom received a triple break of the upper arm.

Crashes on the Coast

Out in Portland, Ore., one company went to answer an alarm caused by a minor fire, but on way the truck collided with a trolley car.

In Los Angeles, Cal., a trolley car crashed into a fire apparatus while on the way to a fire. The crash was so bad that one of the fireman was pinned in when the two masses of steel met — the trolley car ploughed so far into the apparatus that it required a number of men and a tow car to release the victim.

All of these accidents are directly attributable to the parked cars on the streets or to the drivers failing to give the fire department the right of way which the city makes mandatory by ordinance.

Chiefs Urge Municipal Garages

Many cities advocate the construction of municipal garages to take the many cars off the streets. While the chiefs realize that the parking of automobiles in the congested section of the city will soon have to be prohibited, they also are cognizant of the injury that this will have upon the business of the district and they are loath to institute such measures. Chief Charles S. Coomb, head of the Syracuse, N. Y., fire department is one of the many who see in the municipal garage, the end of the parking evil.

Chief Coombs said, "There will be less loss of life and property caused by the fact that the apparatus could not get near a burning building because of the cars standing at the curb.

"There was a fire in the down town section on the top floor of a building that was occupied by a concern employing a large number of girls. Their exit was cut off by flames and smoke — the only way to get them out was by way of the windows. Luckily they were all out of the building when the fire occurred. There was a solid mass of cars that would have made it impossible to raise a ladder up to the windows."

Chief Coombs had been given authority to ram the automobiles with the fire apparatus should he find it necessary in order to get the cars out of the way, and unless conditions in his city improves, he believes that he may have to avail himself of the privilege.

The parking condition is the result of the present day habits and customs of the people so that the blame can not be traced to any individual. However, the craze of following fire department cars and of trying to race the apparatus to a certain spot is a matter of a more serious consequence. In such cases, there is the distinct desire of some one to do an act which the law defines as being contradictory to the privileges of the public.

One Fireman Was Severely Injured Because of This

A trolley car that crashed into a fire truck in Los Angeles, pinned one of the firemen so badly that it was necessary to amputate a leg.

Necessary To Make Examples

Some cities, have tried the plan of having a member of the police force ride on the apparatus on the way to fire so as to note the license plate number of the automobiles whose drivers persist in violating the traffic laws.

Threats alone will not remedy the situation. It is necessary to bring one or two violators before the court, and if found guilty, to be given as heavy a sentence as is possible according to the merits of the case. Should an example be made of one or two cases, and the newspapers give the incident the greatest possible publicity, others who have been doing the same thing will be discouraged from keeping on with such habits.

The first rule of the fire department is to save life, and then property. There is no sane reason why the lives of some firemen should be sacrificed foolishly on the way to answer a call which may be nothing more than to put out a small rubbish fire. Nor is there any just cause to jeopardize the life of the

men because some fanatic likes to have the thrill of watching the fire apparatus dash by.

Chief Kenlon once stated that there are more men killed while going to a fire than were killed while fighting a fire. This is not a natural condition but is one that is brought on by the thoughtless acts of a small minority who go to make a component part of the population.

All the traffic devices in the world can not remedy a condition where there is a willful intent to do certain things. However, punishment by the courts will bring home the seriousness of the act where an unlimited amount of preaching would make no impression.

Remember the chances that the firemen take.

Verdun, Can., Chief Reinstated

Chief Albert Dubeau, head of the fire and police departments of the city of Verdun, Quebec, Can., who was suspended following a fatal apparatus accident during a test, has been reinstated by a vote of 5 to 3 by the city council.

Chief Albert Dubeau, Verdun, Can.

This closes a chapter of severe recrimination by the "city fathers," the lines for and against the chief apparently being drawn on strict racial lines. One of the aldermen who voted for the reinstatement of Chief Dubeau said in debating the matter before the mayor and council: "There is nothing in this investigation report of 86 pages which I have in my hand to convict Chief Dubeau. I will take the blame with the rest of you for the discrepancies in the department. We are to blame, not the chief.

"If we could only give this report to the public I believe there is not one ratepayer or citizen who would condemn the man. There is nothing in it to condemn the man. You are bringing up petty things, showing we are responsible for not 'calling him on the carpet.' He is not a thief. He has been complimented by the King's Bench. You have complimented him. Our ex-mayor has complimented him. He has been exonerated in connection with the tragic accident here."

Previous to the action by the council reinstating the chief, the "Verdun Citizens' League" sent the following communication to the Council:

"We, the Verdum Citizens' League, meeting on the 25th of June to discuss the suspension of Chief Dubeau of the Police and Fire Department of Verdun, wish to inquire if the cause of the suspension was due to an altercation or differences of opinion between the mayor and the chief, and why there should be so much delay in settling the matter?

"We would suggest to the Council that the continued suspension of the chief of police, for the reasons stated above, is not consistent with the dignity of the chief's position or with the dignity of the Council, and is holding the City of Verdun up to ridicule.

"We also remind the council that the police and fire department, under Chief Dubeau's command for the last fourteen years, has been efficiently organized and well conducted and a credit to the city, and we have been especially fortunate in the small percentage of crime.

"Further, we are of the opinion that as Mayor Dupuis is the complainant in this matter of the chief's suspension he should, therefore, have no vote in deciding the issue, as under British fair play, a man cannot be both judge and accuser.

"Also, we are of the opinion that the inquiry into the unfortunate fire department accident would have been more satisfactory to the citizens of Verdun if it had been held in public, as promised and presided over by a neutral authority on fire department control.

"Finally, we would respectfully request that this matter of the suspension of Chief Dubeau be definitely decided at the next meeting of the council; and if the Chief of Police is not immediately reinstated in his position that full information and reasons be given to the citizens through the medium of the press, without further delay.

"We would also respectfully request that this letter be read at the council meeting of June 27.

"Yours respectfully, Verdun Citizens' League, John Cooper, secretary."

COMPOSITION FLOORING PERMITTED BY NEW YORK APPELLATE COURT

Reverses Decision of Supreme Court in Case Brought by Superintendent of Buildings—Text of the Decision in Part

THE use of floor covering which contains a composition of rubber, cork and linoleum, cemented to the floor of modern fire resisting skyscrapers has been upheld by the Appellate Division of the Supreme Court of New York county, which by a divided bench, reversed the Trial Term of the Court, with Presiding Justice Dowling dissenting.

The decision, if not successfully appealed to the Court of Appeals at the state capital in Albany, will save millions of dollars to the owners of buildings over 150 feet in height in the metropolis. Last winter, FIRE ENGINEERING told in detail of the court fight waged by the superintendent of buildings of the city of New York to require the Farmers Loan & Trust Company, owners of a new 23 story building at the corner of 41st Street and 5th Avenue to discard the composition floor covering on the ground that as it was cemented to the floor and covered about 27 per cent of the entire floor area, it was therefor a structural part of the building and not house furnishing. The superintendent of buildings denied the owners a certificate of occupancy. They appealed to the Board of Standards & Appeals and that tribunal upheld the superintendent of buildings. The bankers then went into the Supreme Court and Justice Hatting sustained the contention of the city authorities.

It was contended by the city authorities (not the fire department, however) that cork, rubber and linoleum, if afire would do untold damage to the skyscraper. The building owners put in proof of tests in contradiction of that contention. It was an expensive legal battle.

The latest phase of it is contained in the recent decision of the Appellate Division which runs in part as follows:

"The refusal of the municipal authorities to issue the certificate of occupancy was based upon the fact in this fireproof building over 150 feet in height, about 27 per cent of the floor area was covered with linoleum, cork or rubber tiling cemented to the finished floor surface.

"Candidly, except for this surfacing, the floors were constructed in exact compliance with the provision of law. They were made of four inch cinder concrete slab, upon which was laid three inches of cinder fill, upon which in turn was laid one inch of finished cement. This constituted a completely fireproof floor.

"The building code provides (section 356) that in fireproof buildings, with certain stated exceptions, no wood or other combustible materials shall be used in floors, ceilings, partitions, furrings or other interior finish of fireproof building.

"This section of the Building Code seeks to guard against fire hazard. If the petitioner had tacked or cemented to the surface of the floor, carpet with paper lining, no criticism could have been made. The carpet would have been regarded as part of the floor structure. There is no greater fire hazard in the use of what really is only a carpet of linoleum, rubber tiling or cork. Such floor covering is in no true sense a part of the structure of the building placed upon fireproof concrete and cinder floors, it is a mere furnishing.

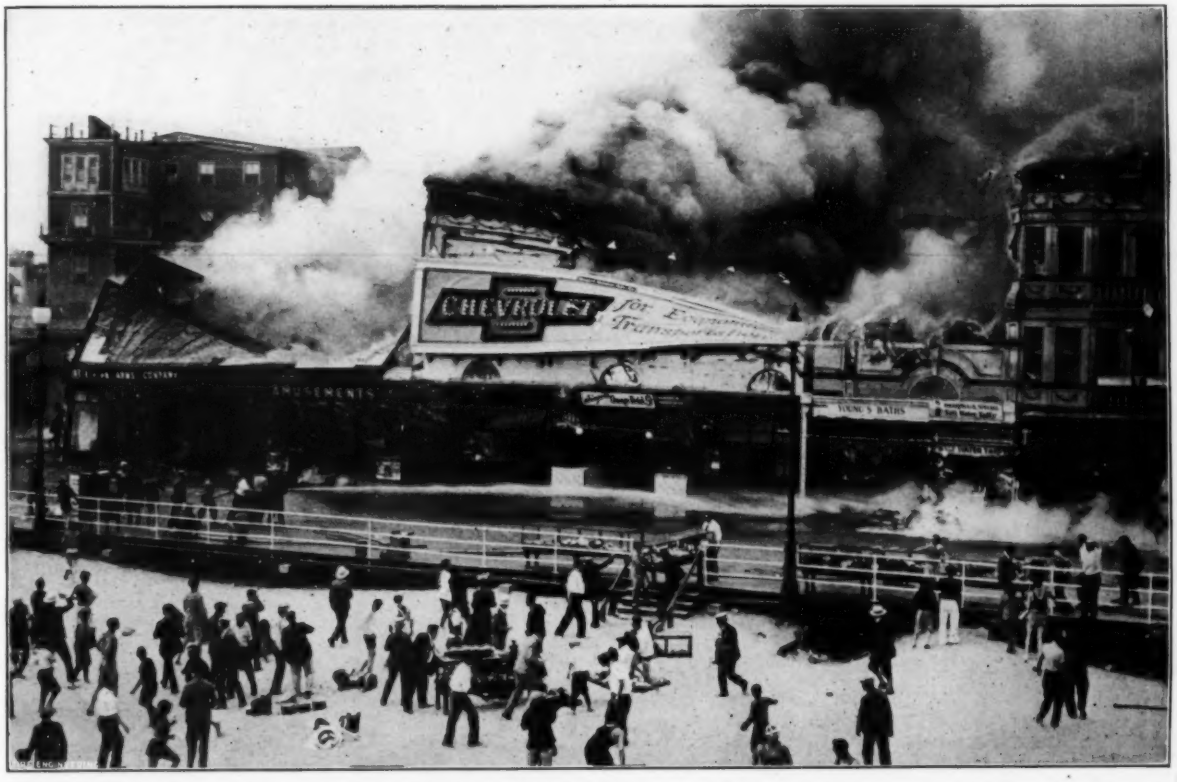
"It is significant that the prohibition of the statute is against the use of combustible material 'in' the floors and not upon the floors. The intent was to forbid the use of combustible material within the floor structure, but not upon the surface of a completed floor, fireproof in accordance with the ordinance."

The decision concluded with a direction to the superintendent of buildings to issue the necessary certificate of occupancy.

WM. JEROME DALY.

Wheat Plain Destroyed by Fire in Central Washington

This great prairie of wheat in the central part of the state of Washington took fire recently from an unknown cause and was completely destroyed.



This Illustration Gives a Very Good Idea of the Property Involved at the Atlantic City Fire. Note the Department Wetting Down the Boardwalk to Prevent Fire From Getting Beneath the Firemen. At the Same Time a Large Force Is at Work to the Rear of the Fire Preventing the Blaze From Extending to the Vast Number of Frame Hotels With Which This Resort City Is Filled. Volunteers Are Shown Salvaging Materials From the Various Concessions. At This Fire 41 Babies From an Incubator Were Rescued and Transported to the Shelbourne Hotel Where They Were Given Necessary Attention.

Big Crop of Amusement Park Fires

Flimsy Construction Responsible for Spread in Most Cases—Some Unusually Heavy Losses

SEASIDE and other summer amusement parks have contributed more than their share to the fire loss this month. Quite a large number of them are reported throughout the country but the biggest seem to have been in New York, Chicago, and Atlantic City. Just why the fires occur at the busiest season of the year, is, and has always been, a question.

At any rate, they start around the 4th of July holidays and by their destruction they deprive some visitors of recreation, and insurance companies, of considerable money.

On July 6th a block on the boardwalk between Columbia Place and Arkansas Avenue at Atlantic City was almost entirely destroyed and about 60 persons and a half dozen amusement places were homeless.

The blaze was directly opposite the Million Dollar Pier. Four small frame hotels on Arkansas Avenue were destroyed. Damage to additional hotels on Arkansas and 8 other boardwalk concessions occupying the remainder of the block between Arkansas and Missouri Avenue brought the total estimated loss to about $200,000.

The flames damaged the boardwalk directly in front of the burning concessions and extended about 400 feet inland from the boardwalk. They were checked at an alleyway connecting Missouri and Arkansas Avenues, half way between the boardwalk and Pacific Avenue.

Lives Endangered

There were 41 babies in an incubator building, one of the concessions destroyed by the flames. The babies were rescued by volunteers under the direction of nurses and were taken to the nearby Shelburne Hotel where guests provided them with shelter. The rescue party included well-dressed hotel guests as well as firemen and police.

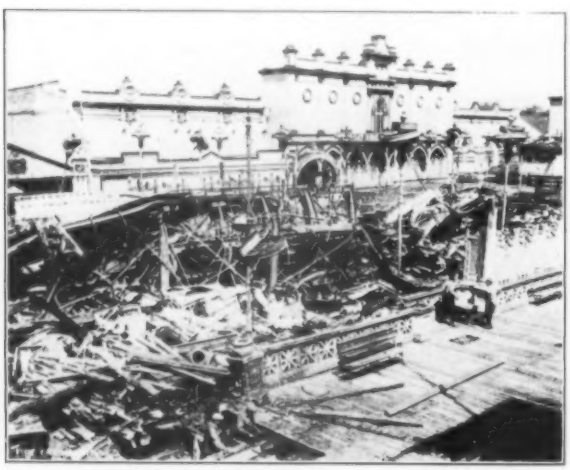
Authorities estimate that one-half of the 800 or more guests who were compelled ot leave the six hotels on Arkansas Avenue were from New York City. The blaze is said to have originated in the "Amusement Emporium" one door from the corner of Missouri Avenue. It was one of the largest concessions, being a miniature carnival containing numerous booths and games. The Missouri Avenue corner was occupied by the Remington Arms Company exhibit. Twenty thousand cartridges were stored there, but only a few ex-

ploded before they were carried to safety and soaked with water. Another of the concessions was Young's Baths, now unoccupied.

Directly behind the boardwalk on Missouri Avenue, the side of the street nearest the fire, was an open air garage containing 100 automobiles. All but one of these were moved to safety.

It is said that a carelessly tossed cigarette was responsible for the fire, although the cause has not yet been definitely ascertained. Every available fire company in the city was summoned and as the flames gained headway, reinforcements from Ventnor were at hand. The two illustrations herewith show excellently the nature of the property involved and also indicate the conditions under which the firemen had to work.

Here Are Some of the Atlantic City Fire Fighters, Including Volunteers, Getting a Line in Operation at Close Range by Using a Whirling Spray Nozzle. A Water Shield Is Provided So That the Men Can Operate Near the Fire. Close Range Work Is Necessary in Order to Get the Fire Under Control Before It Has Gained Dangerous Headway.



The Chicago Fire Entailed a Lot of Steel Work. As Shown in the Illustration Herewith Quite a Mass of Steel Was Used in the Construction of "White City," the Chicago Amusement Resort Which Was Partly Damaged by Fire in June. Despite the Better Construction of This Resort, the loss Totalled $250,000 Before the Fire Was Brought Under Control.

Both indicate very well the highly inflammable construction of the property involved. Note particularly the frame hotels in the background.

Atlantic City is well filled with this type of structure and it is surprising that a fire of this type, after gaining hold, was brought under control without doing greater damage.

In handling the fire along the boardwalk the members of the department had to consider fire spreading beneath them as well as through the buildings in front of them. Fast work was absolutely essential and particularly as a brisk wind was blowing from the ocean.

Rockaway Beach Fire

About the same time fire occurred at Rockaway Beach, N. Y., by which possibly 1,000 persons were made homeless and hundreds of families were routed from their beds. Four small hotels and fifteen other buildings were razed by this fire.

Chicago Fire

Chicago, too, had its amusement resort fire and the loss was estimated at $250,000. Fire broke out in a 250 foot tower at "White City," Chicago's oldest amusement park. The tower was for many years the highest point in Chicago and was completed covered with lights. The illustration herewith shows the tangled mass of steel work following the fire.

The Layout at the Rockaway Beach Fire Was Very Similar to That at Atlantic City. The Boardwalk With the Frame Shacks Bordering on It Made a Very Hot Fire and Required Quick Work of the Department to Bring Under Control. In the Background May Be Seen the Usual Frame Constructed Roller Coasters as Well as Other Frame Buildings.

Fire in Boston Railroad Yards

Damage estimated at $50,000 was caused by a fire which originated in an oil storage shed in the yards of the Boston and Maine Railroad between Boston and Cambridge about a quarter of a mile from the North Station. Two small sheds, twelve wooden passenger coaches, a freight car, and the oil storage house were destroyed and the wooden railroad bridgework was badly damaged. The fire occurred on the afternoon of July 6.

The first alarm was given from a box at the North Station and the blaze appeared so menacing that a third alarm was sounded upon arrival of the first Boston apparatus, the second alarm being skipped. Two Boston fireboats and the Coast Guard Cutter Agassiz came up the Charles River and rendered effective service in checking the spread of the flames. When it was found that the fire was really just across the Cambridge line the department of that city was notified and the Cambridge firemen under District Chief Waitt took charge of overhauling and extinguishing the fire that remained beneath the trestle and in the ruins of the cars and sheds. Chief Daniel F. Sennott had charge of the Boston firemen. Traffic in and out of the North Station was delayed because many of the tracks were blocked by fire fighting operations.

HARRY BELKNAP.

Progress of Hose Thread Standardization

What has Been Accomplished in New England—Personal Work in Campaign Sometimes Necessary—The Work to Date

By P. E. CHARNOCK, Engineer, New England Insurance Exchange*

THE following report, made at the annual convention of the New England Association of Fire Chiefs, gives a very clear idea of what has been accomplished in the work of the standardization of hose coupling threads. This work is of the greatest interest to fire chiefs, enabling, as it does, fire departments of other cities and towns to assist when a fire becomes too great for the local department to handle it alone.

The following comprises a brief report in a general way on hose thread standardization and also an appeal for further assistance in bringing to completion in New England the standardizing of hose threads in every community.

It is a pleasure to state that progress has now been made in each of the New England States. During the past year, New Hampshire has adopted the program and has made a very creditable showing. This has been brought about through the efforts of L. Clarner, Jr., Secretary of the New Hampshire Board of Fire Underwriters. That organization has provided a set of tools, which are at the disposal of any community in that State. A demonstration was held in Concord, in which the writer assisted in convincing Chief Green and several representatives of adjoining communities, of the simplicity of making the change. Mr. Clarner has since been active in furthering the work in this State, so that now the following cities and towns are using the "National Standard" thread: Boscaswen, Concord, Contoocook, Franklin, Hampton Beach, Keene, Laconia, Manchester and Rochester; the tools will soon go to Dover.

Rhode Island Early Adopted National Standard

Rhode Island took early action in adopting or changing to "National Standard". There is still much to be done in this State and I feel that a set of tools should be placed there. This I believe can be arranged during this year by transferring a set from either Massachusetts or Connecticut.

There are now one or more sets of tools available for use in the other States, the New England Association of Fire Chiefs having provided three sets.

The Progress in Massachusetts

The greatest concentration in furthering the work has been done in Massachusetts and Connecticut. In the case of the first mentioned State, a law makes it imperative and the State Department of Public Safety has, through purchasing of tools and its inspector, James Grady, assisted in the changes from non-standard thread. The fire chiefs' associations and the New England Insurance Exchange have also participated actively, so that now we have the following to report for Massachusetts:

Population of municipalities having 2½" hose protection	3,442,967
Population of municipalities unprotected	701,238
Population of municipalities having standard equipment	3,045,849
Population of municipalities not yet standardized	397,118
Per cent of population of protected municipalities standardized	89%
Per cent of population of State of Massachusetts to be standardized	11%

What Has Been Accomplished in Connecticut

In Connecticut, as in past years, Horace B. Clark, fire commissioner of Hartford, has been the guiding hand in furthering the movement. The progress in this state is as follows:

Population of municipalities having 2½" hose protection	1,101,576
Population of municipalities unprotected	279,055
Population of municipalities having standard equipment	814,290
Population of municipalities not yet standardized	287,286
Per cent of population of protected municipalities standardized	73.7%
Per cent of population of State of Connecticut to be standardized	26.3%

Maine and Vermont

In Maine, Chief Sanborn took the initiative and after completing the work in Portland convinced several of his neighbors to convert their threads; later Lewiston changed and now Auburn is about finished with the tools. In all, eleven places have changed to the standard.

In Vermont, most of the larger cities have adopted the slogan of "National Standard" threads, Rutland being the last city to complete the change and Enosburg Falls having the work in progress at the present time. Six communities have changed to standard since this work started.

Progress Slower Than It Should Be

I presume this change is one which must be consummated gradually. The state law in Massachusetts probably has speeded the work somewhat in that state but in Connecticut there is no requirement by law and reasonably good progress has been made, which convinces me a law is not absolutely essential to make it possible to realize state-wide standardization of hose threads. Yet, the progress on the whole is slower than it should be. Some of the reasons for this are, the cities having the tools do not accelerate their use as speedily as might be done. I am sure the work in the fire department is accomplished quickly, but, the delay comes in the water department and at the factories, where the tools lie idle for days at a time. The only way to overcome this is for the chief to keep a daily check on the tools and by constant urging to speed their release for further activity. Again, we find prompt notification is not always given us that the tools are ready for release to another community. Another feature which causes delay is the time required to convince some departments the movement should be adopted, as at present much of this must be done through correspondence.

Personal Visits Sometimes Necessary for Adoption

It appears, however, in many instances the only way some departments can be prevailed upon to take up the work is through personal visits and urging them to make use of the tools. I hope during the coming year to be able to arrange for this.

I bespeak the cooperation of every chief who has completed the change in his city or town and those in whose communities the tools are now in use, to interest his nearest neighbor who has not standardized, so that the latter will agree to take the tools from him and thus each chief will form a committee of one to push the movement.

There are communities now using a Roxbury thread fitting of 3 1/16" x 7 thread of a 3 1/16" x 8 coupling which could, without detriment, when purchasing new hose, specify "National Standard" couplings. This has been done in a number of cities and these municipalities have in time weeded out non-standard hose

* From a paper read before the annual convention of the New England Association of Fire Chiefs.

"I BESPEAK the cooperation of every chief who has completed the change in his city or town and those in whose communities the tools are now in use, to interest his nearest neighbor who has not standardized, so that the latter will agree to take the tools from him and thus each chief will form a committee of one to push the movement."

couplings. There is of course probability of slight leakage at the swivel, but a safe connection can be made between the two types of couplings. I do not recommend this in place of standardizing but it would eliminate some work when use is made of the standardization tools.

Couplings Not Always Carefully Completed

It has been brought to my attention that some manufacturers of hose couplings have not been careful in completing orders for "National Standard" couplings, to have them come within the specified dimensions. Each department should have a set of gauges, in order to test new couplings. If you experience any trouble with new couplings the manufacturers should be notified and, in order to check the size of a coupling, if you do not have test gauges, these can be borrowed by communicating with me.

In closing, permit me to state, it would be of great encouragement to the several State Committees on the subject and myself, to receive an avalanche of requests for use of the standardizing tools. If we could have these on file it would help greatly in speeding the program to completion.

SONS OF THREE DEPUTY CHIEFS ON N. Y. F. D. ELIGIBLE LIST

List Promulgated July 6—Who the Three Men Are—Old "Forty-niner" List Expires

THE New York Fire Department has a new list of eligibles for the position of city fireman. Ordinarily this would not be an unusual thing, were it not for the fact that the sons of three deputy chiefs of department are in honored positions on the new list and in all probability will accept appointment. They are:

No. 9—Patrick A. Maher
No. 69—Francis M. Heffernan
No. 362—John J. Davin

The list was promulgated July 6 and contains 1,659 names, although 4,708 candidates were notified to appear for the examination which was held July 28, 1925, with an age limit of 29 years maximum at the time of filing applications.

Mr. Maher is the son of Deputy Chief Patrick Maher and he has two brothers in the department. Edward is a fireman, detailed as one of the chauffeurs to Fire Commissioner John J. Dorman. He was formerly a mechanic in the fire department repair shops. Another brother, George D. Maher, is attached to Engine Co. 243, having but recently been transferred to the fire department from the police department in which he served seven years. Their father, the deputy chief, is one of the trustees of the Fire Square Club. He is in charge of the Greenpoint and Williamsburg Districts in Brooklyn, and is one of the department's veteran smoke-eaters.

Mr. Heffernan is a son of Deputy Chief James W. Heffernan of the First Division, the inventor of the Heffernan Distributor Nozzle and the Heffernan Shut-Off Valve to facilitate single pumping units to stretch and return to a hydrant without interruption to the hydrant stream. Another son is Lieut. William J. Heffernan of Engine Co. No. 1. The prospective fireman is now a city policeman and was assigned to police duty on the very day the list for fireman was published by the Civil Service Commission. He served in the U. S. Navy before, during and after the World War and made seventeen trans-atlantic trips.

Mr. Davin is the son of Deputy Chief John Davin, the senior chief officer in charge of the Boroughs of Brooklyn and Queens. He is head of the Davin Specialty Company, printers and stationers and is about twenty-four years of age. He took the examination without his father's knowledge and did not disclose the fact until after the test had been held. Although successful for a young man in the commercial field, he is known to entertain a warm affection for the service in which his father has a splendid record. He would like to follow his dad's footsteps.

On July 5 at midnight, there expired what was left of an eligible list for firemen, which list had become humorously known in fire circles as "the forty-niners," a satire on the men of the gold-rush days in 1849, for the reason that some of those on the list and appointed to the department were 40, 41 and 42 years of age—and here is the reason:

It was a war time list, *i. e.*, the applications were open to men between the ages of 21 and 35. During and immediately after the war firemen were scarce, since other fields of endeavor held out to candidates much more lucrative salaries and in order to get a requisite number of applicants, the entrance age was extended to 35 years.

The applications closed February 25, 1921, with 5,564 ambitious ones on the books ready and willing to become firemen. The examination was held in April, 1921, by the Municipal Civil Service Commission. The list was announced July 5, 1923, with 2,222 names on it, and with a prospective life of four years, so that many men who were 35 years of age at the time of filing in February, 1921, were more than six years older, or 41 and approaching 42 years at the time the list "died" in July, 1927.

Many were called, but few were chosen for appointment for physical reasons. Some of those who did manage to get by the Medical Board, resigned soon after their appointment—the job was too strenuous for men starting in at an average age of 40 years. At the time the list expired early in July, about 60 were left on the list and could not be reached, as the quota for firemen was filled and kept filled right up to the last legal minute for making appointments from that particular list.

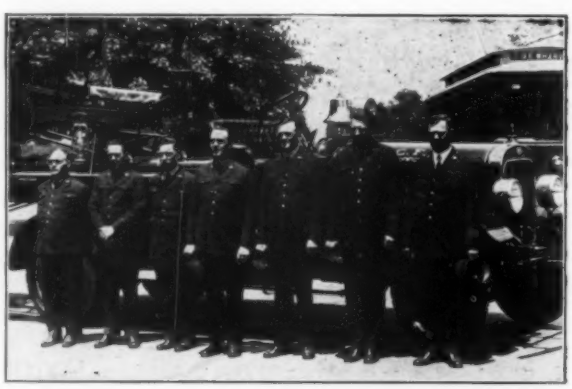
At the rate of replacements in the fire service, the new list of 1,659 candidates will be used up within three years. Quite a number on it were appointed from the previous list, but played doubly safe by taking a second examination before they were reached on the first examination. Then again, retirements are more numerous than ever before, which means an almost continuous turn-over of the personnel of 6,500 men.

WM. JEROME DALY.

Demonstrations at Portland Convention

Chairman of the Exhibit Committee, Chief Albert Herring, reports the following demonstrations will be made at the Portland Convention of the International Association of Fire Chiefs. The list gives the names of the companys demonstrating, and the apparatus or equipment included.

Ahrens-Fox Engine Company—Aerial Truck.
Mine Safety Appliance Co.—Gas Mask and Oxygen Reviving Equipment.
Indian Motorcycle Co.—Motor Cycle Equipment for fire-fighting.
American Steam Pump Co.—The Barton Portable Pump.
Kilsoot Chemical Co.—The use of compound for extinguishing chimney fires.
Foamite-Childs Corp.—Foam method of fire extinguishment.
Eastman Brothers—Fire escapes.
Anchor Brass Works—The Burgeson Water Circulator.
The American Fomon Co.—The use of foam in fire-fighting.
The Rescue Squad of Fresno, Cal., Fire Dept.—Demonstration of first aid to injured.



Washington Company Makes Quick Get-Away

Truck No. 14, of the Washington, D. C., Fire Department, has succeeded in lowering the record for a quick get-away by one second. On July 15, the company, in a series of competitive tests, raced from their headquarters in 6 4/5 seconds. In the illustration, l. to r., are R. E. McAllister, W. D. Heron, M. W. Moore, T. E. Berkeley, driver, R. W. Smith, R. R. Cumberland and Captain O. Leaman.

Topeka, Kans., to Have New Fire Station—Company No. 4 of Topeka, Kans., has moved the quarters of Station 5 while the building which housed No. 4 is being torn down and a new one erected.

Bay Counties, Cal., Organize Association—A constitution has been drafted for the Bay Counties Fire Prevention Association of California, at a meeting held in Piedmont. It provides for greater cooperation between fire and police officials.

Smoke Knocks Out New York Firemen

Many Require Services of Department Surgeon When Acrid Fumes Overcome Them—Other Blaze Fought from "L" Structure

By WM. JEROME DALY

RECENT fires in warehouses in New York City gave the firemen of the metropolis a stiff fight, in one of which forty-six members of the department required the attention of physicians, such was the volume of smoke which issued from a building, the fire in which, for nearly two hours, had to be fought from wholly exterior positions.

Fire in Old Fashioned Warehouse

The earlier fire was on June 24, at No. 52-54 Greenwich Street, in a five story brick warehouse of the old

Governor Solicitous About Firemen Overcome by Acrid Smoke at Fire in West 11th Street, New York City.

Governor Smith, of New York State, is shown in center of picture, with hat in hand, inquiring about condition of men. Dr. Harry M. Archer, honorary Surgeon and Deputy Chief of fire department, is seen at extreme right, rendering first aid to men.

fashioned type. The building was a partly free and partly bonded warehouse in which there had been stored a considerable quantity of wine which was being held for unpaid duty and which government agents declared to be sour and ready for disposal in the sewer. Otherwise the building was stocked with miscellaneous merchandise ranging from dried fruits to typewriters.

At about four o'clock in the afternoon, fire started from some unascertained cause on the second floor, and from there extended by way of the open elevator shaft to all other floors before it was discovered by a laborer who was one of five persons in the building. An automatic alarm of the thermostat type sounded the first call and this was followed instantly by the pulling of the public street box. The fire soon reached third alarm proportions, with Chief Kenlon in command. The elevated structure of the Ninth Avenue rapid transit line passes the door of the building. From this level several lines were trained on the open windows of the warehouse and from the street surface below three deck pipes were put to work. The district is supplied by high pressure. The pressure was 150 pounds.

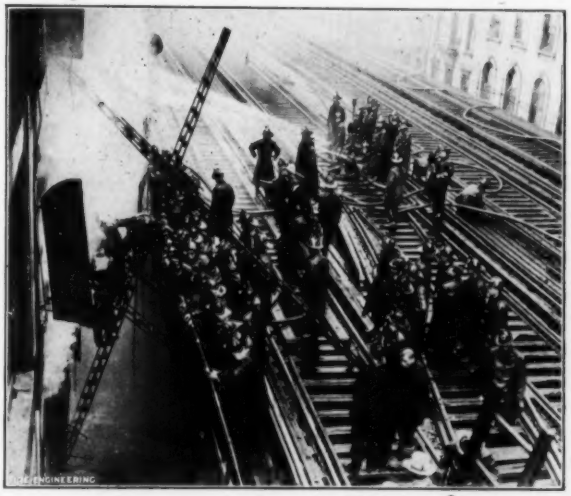
The warehouse burned for over an hour before the firemen effected an inside fight. The structure is quite old and there had been a fire in it two years ago. Due to the humidity and the overhanging elevated railway structure, the smoke palled the neighborhood for blocks around and attracted an unusual crowd from the nearby financial district and the shipping district. The address of the warehouse is near the Battery.

The fire touched on all floors and went through the roof.

Second Fire a Smoky One

A five alarm fire at 10:27 a. m. on June 29, at Bleecker and Bank Streets in a warehouse five stories high proved to be one of the most stubborn blazes New York had had on its hands in some time. The building afire was one of a group of four. The buildings were separated by self closing fire doors and the firemen succeeded in confining the flames to the building at No. 402-16 Bleeker Street, although the other addresses for the entire group of buildings embrace No. 582-8 Hudson Street, No. 84-8 Bank Street and No. 289-91 West 11th Street. The warehouse is owned by Henry I. Stetler, Inc., bonded and free, and containing multitudinous merchandise.

The fire seems to have started on the first floor and was discovered by a workman who had been in the employ of the warehouse for the past seven years. He does not smoke. The fire originated among some merchandise wihch had shortly before been shipped in there



Firemen Attacking Blaze in Greenwich Street, New York City, Using the Elevated Railway Tracks as a Vantage Ground.

from the U. S. Appraiser's Stores. It consisted mainly of olives, typewriters and toys. There had been no previous fires in the building.

Chief Kenlon arrived on the third alarm. The fire was fought from the outside and from adjoining roofs. The building was heavily stocked and the goods piled so high that the work of two water towers was seriously hampered.

The first company to arrive got as far as the landing of the first floor above the street when forced to retreat due to the unusual volume of pungent smoke and fumes. The fourth and fifth alarms were necessitated by the need for more men, as many firemen were knocked out—victims of smoke narcosis. Dr. Archer, of the fire department, established an emergency hospital in nearby stores. The day was hot, the humidity quite thick and the downtown area of Manhattan Island for many blocks around was for a time heavily charged with smoke.

The fire had pretty much its own way for nearly two hours before any telling effects were made. The building being of semi-mill construction, the rapid spread of the flames, plus the acrid smoke, made the task of the firemen a trying one.

Fire Commissioner Dorman attended, with Proctor L. Dougherty, Commissioner of Public Safety of Washington, D. C., but they too were forced to retreat, such was the effect of the smoke on them.

Watch lines were maintained on the fire for two days afterward.

CHIEF SHORT, OF OAKLAND, RETIRES AND OUTWITS POLITICIANS

Efficient Fire-Fighter Asks to be Retired to Forestall his Political Removal—Only Fifty-eight Years of Age

CHIEF SAM SHORT, of the Oakland, Cal., Fire Department, went the politicians "one better," when he retired and applied for a pension on July 8. His retirement took place on July 11, the date set by the administration of the Oakland city government for his removal.

Ex-Chief Samuel H. Short, Oakland, Cal.

Chief Short passed his 58th birthday on July 17, so that the city should have had the benefit of his vigorous personality and efficient services in the natural course of events for several years to come. But politics, the bane of the fire department, decreed otherwise, and the city is so far the loser.

Chief Short on his retirement completed 34 years in the fire department, having become a member in 1893. He was made a captain in March, 1903, became second assistant chief in 1911 and first assistant chief in 1917. He has been chief since July, 1921.

Chief Short has taken a prominent part in the affairs of both the International Association of Fire Chiefs and the Pacific Coast Association of Fire Chiefs. He was elected president of the Pacific Coast Association in 1925.

Completes 30 Years as Chief

Chief Albert Volk, of the Marshall, Minn., Fire Department, on July 1, celebrated the 30th anniversary of his appointment as its head. Another anniversary that falls close to the culmination of his long service as chief is that of the founding of the Marshall Fire Department, which took place on July 14, 1890, 37 years ago.

In commemoration of Chief Volk's anniversary, he was presented with a solid gold badge with inscriptions indicating his length of service. The chief originally enrolled in the fire department in 1890. When officers were elected in 1896, he was named foreman, and on July 1 in the following year he was elected head of the department. Since then he has served in that capacity continually, winning re-election during most of those years by acclamation.

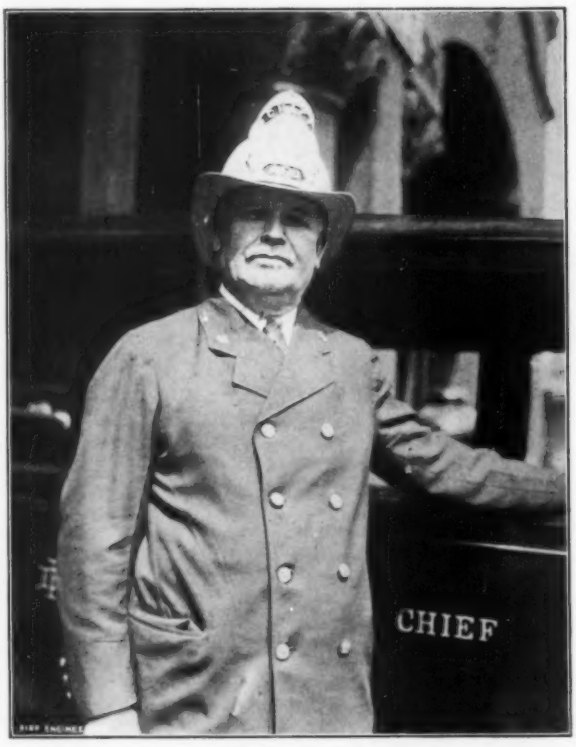
The chief has schooled the personnel of the department in methods of fighting fires, outlining means of combatting blazes in the major business places of the city, with the result that the department has a fine record in controlling and extinguishing fires and preventing what might have developed into conflagrations. The department also has a reputation for many quick runs, though Chief Volk has always warned against reckless and too fast driving in order to prevent accident. Four new pieces of apparatus have recently been added to the department.

Has Long Service as Fire Officer

Never having served as a private, Captain Joseph M. Curran, of the Worcester, Mass., Fire Department, who has just celebrated his 35 years as an officer, has had a remarkable fire-fighting career. He joined the department April 4, 1892, being appointed a call lieutenant, when the company was organized on that date. Previous to that time he had been a foreman of the volunteer company, joining it in 1884. In 1894 he was made captain of Hose 6, and has remained in that position ever since.

During Capt. Curran's service with the fire department many changes have taken place. He started with the volunteers when the hose reel was pulled by hand. The next step was to the horses and then motors were introduced. Each step has been an improvement of course, but as Capt. Curran said, "I wonder what we will have next?"

In the early days of the service, firemen were allowed two days off a month and worked 24 hours every other day: "The old-timers would certainly enjoy the two platoon system," Capt. Curran said, when speaking of his early days with the department.



Chief Cody, of Atlanta, to Retire on 50th Anniversary

Chief William B. Cody, of the Atlanta, Ga., Fire Department, definitely announced on July 7 that he would retire from active duty on the date of his fiftieth anniversary of joining the department, July 6, 1928. Chief Cody entered the service of the Atlanta department when it was a volunteer force, and rose through the various grades until appointed chief in 1915. The chief had previously announced his intention to retire, but had not made it definite until the present time.

How Albany, Ga., Won Fire Waste Award

Chief Brosnan Tells of His Methods which Won This Distinction for His City—Other Awards of Fire Waste Council

FOR the second consecutive year the city of Albany, Ga., has been awarded, through its chamber of commerce, the grand prize in the Inter-Chamber Fire Waste Contest on the National Fire Waste Council, of the Chamber of Commerce of the United States. In this contest the chairman of the contest committee, Richard E. Vernor, Manager of the fire prevention department of the Western Actuarial Bureau, reported 528 official entries in the contest as contrasted with 442 a year ago. The contest includes 58.5% of all eligible local chambers. The committee also encouraged chambers of commerce to submit reports covering their 1926 activities to the Contest Grading Committee. Three hundred and three reports were received as compared with 221 last year.

In describing his work, which was responsible for the award on two successive years to Albany, Chief D. W. Brosnan, in an address before the Arkansas Association of Insurance Agents and the Lions Club, said in part as follows:

Albany, Georgia, has made such an outstanding record in fire prevention and control, that I have been asked to tell just how we have been able to steadily reduce our fire waste to the point where our per capita fire loss is the lowest in the United States, being for 1926 only forty-four cents, as compared with the national per capita loss of five dollars. I shall endeavor to tell you some of the methods which we have employed to protect the citizens of our community from fire, and to explain how, in our humble judgment, other cities can do likewise.

I shall attempt to discuss the different phases of fire safety in the order in which we think they rightly belong—Fire prevention, Protection of life, Protection of property, Fire extinguishment and Salvage.

Fire Prevention

Fire prevention comes first in the control of fire waste, for there can be no loss of life or property damage in the fire that is not allowed to start. We have put forth more effort in fire prevention than we have in fire extinguishment. Our records of fires are most complete. They show the cause of every fire, and, if you know the cause, it is not a hard matter to apply a preventive.

First, we adopted the National building code, and we have rigidly and fearlessly enforced its requirements. This makes for safe building construction. Standard walls are required; exposures must be protected in a standard manner and safe exits must be provided. Buildings are restricted as to heights and occupancies. All chimneys are built from the ground and lined with terracotta flue lining. Wood shingles are outlawed in the construction of new buildings and only ten per cent. repairs are allowed in any one year on present wooden roofs. The anti-shingle law has been in effect for five years. I quote results obtained as shown by our records. During the year 1916 the percentage of fires caused by sparks on wood shingle roofs was eighty-seven, as against forty-one per cent. during the year 1926. We must admit that the only practical method of preventing this common cause of conflagration—fires starting on wood shingle roofs—is to abolish the wood shingle. Five years hence our record will be clear of this hazard, for after that time there will not be a wood shingle roof in our city. Chimneys should be built from the ground and lined with terracotta flue lining. Hearths and ash pits should be inspected during construction to see that they are properly installed. Heating plants, if installed properly, give no further trouble other than to see that smoke pipes are renewed and replaced when burned out. There is really no excuse for a fire starting in a dwelling that has a hard roof, properly constructed chimneys and safe electric wiring, if the occupants practice just a reasonable amount of carefulness. Every building in Albany is inspected once each year by a uniformed fireman. Mercantile, factory and public buildings are inspected monthly. The main purpose of these inspections is to see that all unnecessary waste material is removed from the premises, to check up electric circuits and heating equipment, to see that laws regulating the storage and handling of volatile liquids is being complied with and to see that exits and fire escapes are in order and unobstructed.

Where we have information through mercantile reports and business circles that a mercantile risk is in financial straits, we increase the vigilance of our inspections to once a week. We also find out what insurance agent carries the line and check up on the amount of insurance carried. If we have reason to believe the stock is insured for more than its value, we request a reduction of the line. Our requests are always complied with, for our department cooperates most fully with the local agents. Back of all this, we have our night fire patrol. A uniformed fireman, equipped with an electric lantern, looks into every mercantile risk in the business district twice each hour during the night and goes through every cotton warehouse in the city three times each night. During one season our patrol discovered seven fires in cotton warehouses; the damage was confined to one bale in each instance and loss on the seven fires did not exceed two hundred dollars. By the adoption of these methods, you can see there is small chance of arson, for we put the fear of the fire department into their heart when it comes to a question of a crooked fire. They know it is far safer to bankrupt than to burn. We follow this up with rigid prosecution if there is evidence of arson. By this system of rigid inspection, we also discover incipient fires, the department gets the alarm promptly, and the loss is held to a minimum.

It is essential that the cause of each fire be determined, so we exhaust every effort toward this end. Last year we determined the cause of every fire except one. A camera is carried as a part of our regular equipment and a picture is made of every fire. The camera reveals what we may fail to see, and tells the story at a later date, if need be. We believe that ninety-five per cent. of all fires are due to carelessness, improvidence, ignorance and dishonesty. I have explained how we deal with dishonesty, and the other three factors can be cared for through the enforcement of regulations and the education of the public.

We sell fire prevention to the public through the press, where we have news items covering fire prevention; editorials and paid advertising to emphasize our ideas. We get the cooperation of all the civic bodies and clubs through talks and special fire prevention programs at their meetings. Each year we are given the support of the pulpit through sermons on fire prevention in the various churches in our community. Addresses are made in all the city schools, and fire prevention is a part of their regular work. Every pupil makes a fire inspection of his home and through the

Award of the Grand Prize of the National Fire Waste Contest to Chief Brosnan, of Albany, Ga.

L. to R., John W. O'Leary, President of the United States Chamber of Commerce, Chief D. W. Brosnan (holding tablet) and Governor Clifford Walker, of Georgia

teacher returns to the fire department a home fire inspection blank properly filled out. In this way we are not only educating the boy and girl (who will be the man and woman of tomorrow) in matters of fire safety, but we are getting fire prevention before the mothers and fathers in the homes, and showing them some of the hazards of fire. Fire prevention parades of floats furnished by civic organizations and participated in by outstanding citizens carrying banners with slogans on fire hazards, catch the eyes of some people who would not be reached otherwise. During fire prevention week outdoor talks are made to assemblies of people from the rural districts. We attempt to reach especially the country negroes and to discourage their practice of locking their children in their homes while they are at work in the fields. How often we read accounts in our daily papers of children burned to death in their homes through this criminally careless practice.

Protection of Life

In this branch of our work we have, indeed, been successful, for during our seventeen years of service, we have never lost a life or had any of our citizens injured in a fire. This unusual record has not been accidental or a matter of luck, but it has been accomplished through a constant and careful study of hazards in all buildings of public assembly and of sleeping quarters of every character, and by the rigid enforcement of regulations that safeguard human life under adverse conditions. All places of public gathering must have the required number of exits and they must be

properly marked. All aisles must be unobstructed at all times, and every reasonable safeguard furnished for the individual protection of all occupants. Every school building is equipped with fire drill gongs, and a fire alarm box connected with fire department headquarters is provided on each floor of every school building. Fire drills are required semi-monthly and are supervised by the fire department.

Family garages are not allowed in dwellings or apartments, nor do we permit the storing of automobiles or any volatile liquid in buildings used for sleeping quarters or places of public assembly, unless the building is entirely of fire proof construction.

Protection of Property

Despite precautions we still have fires. A modern fire alarm system with an alarm box within easy reach of every citizen is one of the first essentials of a well organized fire department.

Dependable fire apparatus of standard manufacture which will deliver the goods when called upon and plenty of fire hose that will stand the gaff and will not burst under the strain of service are absolutely necessary. There must be an abundant supply of water delivered under high pressure through a distributing system of pipes of sufficient size not to cut too heavily on volume and pressure through loss by friction. Present day hazards require special equipment for handling fires. We use a foam generator in oil and other fires of like kind that have to be smothered out and we use one and one-half inch hose lines where it is practical to do so.

Extinguishment

Good equipment, however, for combatting fires would be of little service unless efficiently handled.

Most of our success in extinguishment of fires may be attributed to the prompt covering of exposed buildings on arrival of the department at the scene of the fire. The necessary equipment goes into service and hose lines are laid with an eye single to confining the fire to the building involved, but at the same time to be so positioned that we can protect surrounding property if need be.

As proof of the efficiency of this method of action, we have never had two dwellings to burn in the same fire, nor has a fire extended from one mercantile establishment to another during our seventeen years of service.

Firemen must be trained to handle equipment with speed and skill. This can be accomplished best by weekly drills to familiarize them with the apparatus. Compulsory daily exercise keeps the men physically fit to do the laborious work of fire fighting, but it is more important that firemen be directed to use their brains.

Salvage

In process of extinguishment, the question of salvage becomes paramount. In our department the hose and tarpulin covers race each other, for when water is applied above it is necessary to cover the property below if the loss is to be curtailed. We carry roofing material on our ladder trucks to cover the roof where it is burned or when it is necessary to open the roof for purposes of ventilation. This method prevents water damage in case of rain. In a recent dwelling fire, where the fire loss did not exceed one hundred dollars, we had just completed the temporary roof when a downpour of rain occurred that would have damaged the building and contents several thousand dollars.

These are some of the means by which we have tried in Albany to put theory into practice. Now let us see what have been the results. I shall quote figures taken from our records in proof of our accomplishments. As stated before there has been no loss of life or injury to a single person in a fire.

	Number of fires	*Loss*
Year 1917	134	$22,386.00
Year 1918	144	39,752.00
Year 1919	121	284,045.00
Year 1920	166	21,068.00
Year 1921	148	38,122.00
Year 1922	137	7,558.00
Year 1923	160	52,722.00
Year 1924	159	7,838.00
Year 1925	127	27,106.00
Year 1926	119	7,993.00

These figures cover both the insured and uninsured loss. From this record it will be noted that we are reducing the number of fires through our fire prevention activities, and that we are curtailing the loss through more efficient methods of operation. We are having fewer fires than we had ten years ago, and the loss has been reduced notwithstanding the fact that in that time our city has almost doubled its population and the amount of property under protection has increased proportionately. These results have been accomplished notwithstanding the increased values of buildings and their contents. Our average per capita loss the past five years has been approximately one dollar, and for three of the five years, the loss has been less than fifty cents per capita. Through the earnestness of our efforts and the results obtained, we have gained the confidence of the public and they have given us their continued cooperation and support. In carrying out these measures we have tried to lead instead of drive the public, to gain their intelligent cooperation instead of their selfish antagonism.

Our department is operated economically, but we never allow economy to overstep efficiency. The operating cost this year will be about thirty-five thousand dollars or less than two dollars per capita. We have received national recognition of our work for fire prevention as follows: In the year 1924 the United States Chamber of Commerce awarded us a bronze plaque for the best record of any city in the country under 20,000 population. In 1925, we won the grand award over all cities in the country irrespective of size. In 1926 we won the grand award over all cities irrespective of size for the second time, and the contest grading committee further commended us by stating that we were miles ahead of any other American city in fire prevention and control. Such recognition from such a source makes the work well worth while.

For such an outstanding showing, the insurance rating bureaus had to give us credit. In 1922 our base classification was reduced from second to first class. In 1926 our base classification was reduced to first class minus five points. You, Gentlemen, know just how hard it was to put this over, but our record spoke for itself, and it had to be recognized and rewarded by the underwriters. We are entitled to still lower rates on certain classes of risks and I feel confident we will get them.

These reductions in rates save our taxpayers approximately ninety thousand dollars each year. So, to our mind and to that of the average citizen of Albany, there is no question but that fires can be prevented and losses reduced, for we have fully demonstrated the theory in its practical application.

Other awards winners in this contest, as announced by George W. Booth, chief engineer of the National Board of Fire Underwriters, as chairman of the contest grading committee, were, in their respective classes, the Milwaukee, Wis., Association of Commerce in Class 1; Huntington, W. Va., Chamber of Commerce, in Class 2; and Owensboro, Ky., Chamber of Commerce, in Class 3. The honor cities in Class 1, cities of over 100,000 population were:

Philadelphia, Pa.	Indianapolis, Ind.
Portland, Ore.	Fort Worth, Tex.
Rochester, N. Y.	Seattle, Wash.
Detroit, Mich.	Grand Rapids, Mich.
New Orleans, La.	Wilmington, Del.

In Class 2, cities of 50,000 to 100,000 population, the honor cities were:

Pasadena, Calif.	Bethlehem, Pa.
New Britain, Conn.	Fresno, Calif
Springfield, Ohio.	St. Joseph, Mo.
Bay City, Mich.	Charleston, W. Va.
McKeesport, Pa.	Wichita, Kan.

Class 3 honor cities, comprising those between 20,000 and 50,000 population, were:

Yakima, Wash.	Butler, Pa.
Mansfield, Ohio.	Baton Rouge, La.
Battle Creek, Mich.	Hagerstown, Md.
Petersburg, Va.	Lorain, Ohio.
Uniontown, Pa.	Riverside, Calif.

In Class 4, cities of under 20,000 population, the following were honor cities:

Billings, Mont.	Marlow, Okla.
Fullerton, Calif.	Pekin, Ill.
Laconia, N. H.	Fremont, Mich.
Oceanside, Calif.	Ardmore, Okla.
Weston, W. Va.	Blackwell, Okla.
Torrance, Calif.	

(*Continued on page* 820)

A Schoolboy Bicycle Fire Fighting Unit

The latest innovation in Germany is the training of schoolboys as fire-fighters on bicycles. The illustration shows a plan adopted by a gymnastic teacher in Hartz, whereby four boys on bicycles tow the two-wheeled fire apparatus of the school, in answer to a fire alarm.

Wholesale Produce Fire Well Handled

Confining the Fire to Single Building Reflects Much Credit on Department—Possibility Fire May Have Been Checked in Fire Building

THE fire described in the last issue of this journal, under the department of Administration, showed very fine work on the part of the local department, although there is a slight possibility that the fire may have been checked within the building in which it started and not have been permitted to burn this build- to the ground.

The fire building and surrounding structures are shown in the sketch herewith.

As described in the last issue, the city in which this fire occurred was on the Atlantic seaboard and had a population of approximately 70,000.

The fire department was made up of seven engine companies all of which were equipped with motor apparatus, and two truck companies, each having a city service truck.

Response to Alarms

Response to alarms in this department are as follows:

First alarm, Engine Cos. Nos. 1 and 2 and truck company No. 1.
Second alarm, Engine Cos. Nos. 3 and 4 and truck No. 2.
Third alarm, Engine Cos. Nos. 5 and 6.

The remaining Engine Company, No. 7, is only called in a great emergency for it is left to cover alarms when the first three assignments are at work.

The water supply was fairly satisfactory and plenty of hyrants were available for use.

Due to the limited personnel of the various companies it was necessary to confine each engine to a single line due to the difficulty encountered by the few men of each company in stretching lines from the further hydrant. As a result each company only employed a single line.

Occupancy of the Fire Building

As described in the last issue, the fire building was a wholesale produce house. On the fourth floor were carried on various processes, such as coffee roasting, sugar pulverizing, spice grinding and extract compounding. In addition to the above main process, large quantities of sugar, beans, paper containers, extracts, coffee, and rice were stored thereon.

The third was occupied by groceries, clothing, tool supplies, and in a separate room approximately 100 cases of revolver ammunition.

On the second floor was approximately one carload of egg crates (knocked down), cereals, canned goods, starch and a small printing press with incidental equipment.

The ground floor was occupied by offices, canned goods in storage, egg case shooks, soap, beans and sugar, while in the basement there were approximately two carloads of matches. sixty bales of excelsior, canned goods, beverages and the usual boiler room.

The most pronounced defect in the building was an open elevator shaft running from the basement to the top floor. Only wooden gates covered the entrance to the elevator on the various floors while on the other three sides were open wooden grill-work.

The Fire

At the time the fire occurred there was a strong wind blowing from the southeast, tending to drive the fire toward the large cold storage plant directly north of the fire building.

The fire started about 11:30 on a Saturday morning, on the fourth floor due to the explosion of pulverized coffee. The fire flashed across the entire floor and setting fire to some crates alongside the elevator shaft, spreading the fire to the third floor and also sending embers to the basement.

The entire building was eventually involved through the fast spread of fire on the third floor as well as the fourth, but the department prevented the fire from entering the adjacent implement or harvester warehouse.

Suggested Method of Handling the Fire

As noted above, it might have been possible to confine the fire to the top floor alone. The method of procedure would have to have been different from that employed by the department.

Here is the suggested method of handling the fire.

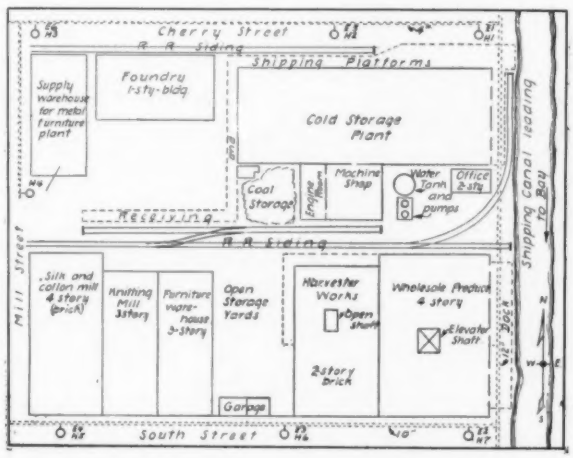
Assuming that on the response of the first alarm the top floor is well ablaze and fire is starting on the third floor. The first company has stationed itself at hydrant No. 7 and stretches two lines at once. One of these lines should go to the basement to make sure that fire is not burning at the bottom of the shaft. The second line should go at once to the third floor and quickly kill any fire which remains thereon, subsequently proceeding to the floor above.

Engine Co. No. 2 should place itself at the dock and take suction from the channel. Stretching two lines at once, both going to the top floor by way of ladders which are to be placed by truck Co. No. 1; these two lines to operate from the water side if possible. If not possible, then they should be operated from the South Street side and in this case the fire escapes may be utilized for one line.

Note what the assignment of apparatus on the first alarm will have accomplished; it will have prevented the fire from starting on the floors below the third. It will have checked the fire on the third floor and gotten in operation on the fire floor.

Calling Help

The second alarm should have been transmitted immediately upon arrival of the first alarm apparatus as was done by the fire department in handling this fire.



Upon the arrival of second alarm apparatus, assignments should be made as follows: Engine Co. No. 3 at the dock should take water from the channel and two lines stretched to the rear of the building to the fourth floor by way of ladders, these ladders to be placed by truck Co. No. 2.

Each of these lines should be equipped with inch and a quarter nozzle as should the lines of the other engines operating at the dock.

This will give us four lines operating on the fire from the outside of the building.

In addition we have one line operating from the third floor up on to the fire on the fourth.

Engine Co. No. 4 also to be stationed at the dock and two lines stretched to the roof of the implement warehouse to operate into the fourth floor.

Each of these lines also to be equipped with inch and a quarter nozzle.

This will give six 1¼-inch streams in operation on the fire floor and in addition a single line operating on the floor below.

If these lines cannot hold the fire or if there is any indication that it is going to get beyond control, a third alarm may be transmitted.

But it is likely that if these lines are promptly put in operation, and with the unlimited supply of water from the canal, there will be no probability of it extending further.

In any event if there seems to be a tendency for the fire to continue on with unabated fury, transmit a third alarm and bring in the two additional engine companies.

Both of these can be stationed at the dock and lines stretched to operate at the point most exposed.

USE OF SMALL HOSE LINES INCREASING IN POPULARITY

Advantages of Smaller Diameter Lines Chiefly in Mobility and Saving of Water Damage

By WILLIAM O. SCHLEINITZ, B. A.

CRITICISM has occasionally been directed against fire departments, and sometimes justly, because of excess water damage. While big streams of water are often very necessary, there are any number of fires which may be reached quickly where a 1½ inch line or a 1 inch line of water is more effective than a large one.

The following article has been made possible by personal interviews with prominent fire chiefs from every section of the United States, on the use and method of handling the smaller streams.

Fires in Residences

The benefit derived in using 1½ inch hose instead of 2½ inch hose lies in the fact that 1½ inch hose is much easier to handle inside of dwelling houses than the 2½ inch size. It is easier to carry upstairs, easier to move from one room to another and likewise the damage from water is much less. Because of its lightness, it is especially suitable for roof fires, for trimming down after a fire or heading off a fire in walls, floors, ceilings, shingle roofs, etc. A prominent fire chief recently said: "I am using my 1½ inch hose more and more and my chemical hose less in residence fires and on all fires inside of buildings because I find that my 1½ inch line will put out more fire than the ¾ inch or 1 inch chemical line and with practically no more water damage.

How It Is Laid

There are various methods of laying 1½ inch hose. The difference in methods is largely due to the variance of conditions of usuage and the type of fire that is being fought. Let us first take up the fire in residential districts and consider the method of connecting 1½ inch hose as suggested by experienced users.

A prominent western chief lays a 2½-inch line of hose from his hydrant or pumping engine up to the fire on to which hose is attached a 2½" x 1½" x 1½" siamese with gates, enabling him to get two 1½-inch streams from one 2½-inch lead. One line is 100 feet long and the other is 200 feet long, enabling him to reach both the front and the rear of the burning structure. Each line is equipped with a ½-inch shut-off nozzle. If this is not enough, the same layout can be duplicated. The number of feet of hose on each 1½-inch line varies, depending on local conditions.

Another group of chiefs use the following plan:

A 2½-inch line of hose is connected up to the hydrant or pumper with a shut-off nozzle on the end. A siamese or "Y" connection 2½" x 2½" x 1½" with gates is inserted at the coupling fifty feet back of the nozzle. The 2½-inch line is connected up again to one side of the "Y" to provide a full stream if wanted and the smaller or 1½-inch hose is taken off of the other side of the "Y". A second small stream can of course be obtained by taking the tip off the shut-off nozzle and attaching the 1½-inch line to the shut-off nozzle direct. If the hose coupling does not go on the shut-off nozzle an adapter can be carried. This layout would also allow the use of the 2½-inch line on the outside of the building and at the same time the small line could be taken into the building where it would prove better to handle and easier to move around with than a 2½-inch line. The "Y" could be either with gates or without gates as preferred as the nozzles would have shut-offs on them. This arrangement enables the department to obtain either a 2½-inch line or a 1½-inch line from one line without having to lose time by shuttting a line down and changing connections.

Then, too, there is another practical way of using 1½-inch hose by removing the shut-off nozzle tip and attaching the 1½-inch line direct to the shut-off nozzle. This then gives you one 1½-inch line and the stream can be controlled either by the shut-off nozzle on the main line, or the shut-off nozzle on the 1½-inch line. In case the fire should get out of control you have your big line ready for use by simply disconnecting your small hose and putting your regular nozzle tip back on.

Carrying 1½-Inch Hose

The question of where to efficiently pack a supply of 1½-inch hose on a piece of apparatus is often decided by the number of feet of hose which is carried. The quantity varies and depends on conditions where hose is to be used. In residential districts there may be deep lots with the house setting quite a ways back in the yard. In these sections many chiefs use 1½-inch hose to extinguish fire from the start, necessitating a greater number of feet of hose. Many chiefs consider two streams of 1½-inch hose superior to one stream of 2½-inch hose or four streams of 1½-inch hose superior to two streams of 2½-inch hose. Another chief carries 300 feet of 1½-inch hose on each piece of motor apparatus on reels, while still another chief mentions that he would never advise the use of a reel, but would advise folding it the same way as 2½-inch hose. And still another chief carries it in a hose basket on the apparatus while there are others who carry no special reel or device whatsoever but who simply roll it up and fasten it with a strap and keep it in some handy place on the side of the apparatus or in a special box. As for carrying of the hose, this is a matter to be decided by the different chiefs. This will depend on the type of apparatus and the special equipment already in use.

Fittings for 1½-Inch Hose

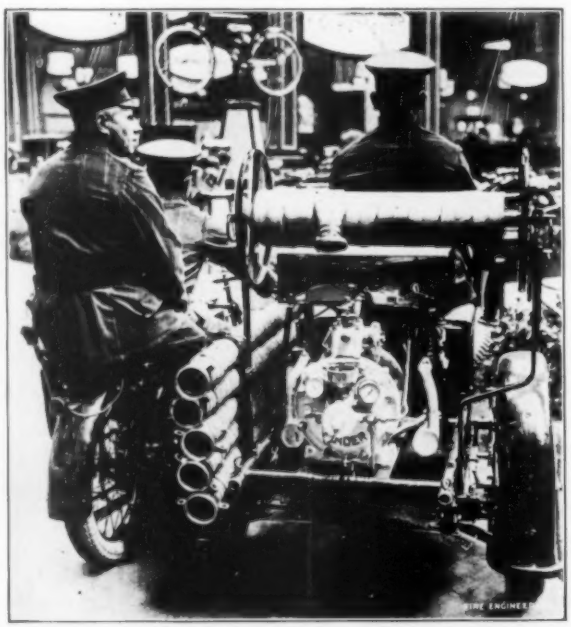
It seems the unanimous opinion of all the chiefs that a good substantial leader line shut-off nozzle with a tip at least ½-inch be carried for each line of 1½-inch hose. Some departments use up to ¾-inch outlet, but this is the exception.

Siamese connections for dividing a 2½-inch line into two 1½-inch lines or for dividing one 2½-inch line into one 2½-inch line and one 1½-inch line would find good usage in a fire department. The siamese could be furnished with or without gates. Reducers could also be used for making connections between the 2½-inch siamese and the small hose or could be used for taking only one line of 1½-inch hose from the tip thread of a shut-off nozzle. There are several good substantial reels and baskets on the market capable of carrying up to 300 feet of 1½-inch double jacket hose.

In conclusion it might seem that the use of the leader line or 1½-inch line is not being confined to any particular section. North, South, East and West are using it with excellent results.

While the Pacific Coast fire chiefs, almost without exception carry a certain amount of 1½-inch hose and have been given the credit for its origination, the writer has been in departments in the South which have been actually using 1½-inch hose for thirty years.

The universal opinion however, of those who are using it regardless of what section of the country, is that for residential fires, better success is obtained. It is lighter to handle, one man being able to handle a line; water damage is lessened and that last but not least it effects a great saving of 2½-inch hose.



This Side Car Can Be Detached and Run On Its Own Power

A new departure in German fire apparatus is this motorcycle unit, recently shown in an automobile show in that country. The side car attached to the motorcycle carries a fire-fighting equipment, and it possesses the unique feature of being detachable from the cycle and to be able to run on its own power.

Fire Marshal Taboos Floating Fire Trap

How Department Won Legal Battle Precipitated by His Prohibiting Use of Wooden Barge as Dance Hall—the Points Involved

By BATTALION CHIEF ROBERT B. ROGERS, Seattle, Wash., Fire Department

FIRE MARSHAL ROBERT L. LAING of the Seattle Fire Department marshalled a corps of fire inspectors on a dock in that city and forcibly prevented passengers from boarding the floating dance hall "Sea Lark," because of the vessel's unsafe condition. This action accurred on May 17, 1925, but the incident was not ended for two years; he was sued for libel and five thousand dollars damages; was cited in a show cause order praying for an injunction; but finally succeeded in establishing the legal precedent that municipal authorities have jurisdiction in enforcing city ordinances upon vessels licensed to operate by the United States Steamboat Inspection Service, when such vessels are not equipped with motive power and are operated upon waters within the corporate limits of such municipality. He also established another precedent—or rather re-affirmed one which is already well known in fire department circles—that when a fire official has knowledge that the lives of citizens are being endangered and starts out to protect them by enforcing the law, he fears neither damage suits, libels, injunctions, United States government officials, politics, or gentlemen with money who would sacrifice safety for dollars.

> "When a fire official has knowledge that the lives of citizens are being endangered and starts out to protect them by enforcing the law, he fears neither damage suits, libels, injunctions, United States government officials, politics, or gentlemen with money who would sacrifice safety for dollars."

Description of Vessel

The vessel was a scow of about 37 foot beam and 200 feet in length, on which had been built a two-story double floor structure designed for dance hall purposes and operated as such. Eighty per cent of the floor space was for dancing, the other 20 per cent being used for kitchen and concession stands. There was also constructed in the hold, below the first floor, a small room, entrance to which was from the first floor through a trap door. This room was used as a jail for incarcerating unruly persons who might be on board. There was also a large room in the hold used as a receptacle for refuse from the kitchen. The entire vessel was of flimsy wooden construction of an inflammable nature; was not equipped with motive power, but when in use was towed about the bay and lake front of the city by a tugboat attached alongside by ropes. The passenger capacity was 750 people.

How Licensed

On July 12, 1924, Montrose M. Ringler obtained from the United States Inspector of Hulls and the Inspector of Boilers, a certificate that they had completed the inspection of the rigged barge "Blue Bird"—which name was changed to "Sea Lark" on May 7, 1925—that it was suitable and permitted to navigate the waters of Elliott Bay (Seattle Harbor) and Lake Washington. A dance hall license was then granted by the city of Seattle, inasmuch as the vessel was operated upon the waters of Elliott Bay within the corporate limits of the city.

This dance hall license was subsequently revoked by the city council at the request of the fire marshal, and in November, 1924, Mr. Ringler was notified that the "Sea Lark" could not be operated as a dance hall within the limits of the city of Seattle. On March 24, 1925, the Board of County Commissioners of King county (in which county the city of Seattle is located) issued a license to the Ringler Amusement Company to conduct public dances on board the Barge "Blue Bird" ("Sea Lark"), for the months of April, May and June, 1925. In April, 1925, with a number of persons on board, the barge was conveyed from Pier No. 11, Seattle, in and around Elliott Bay within the corporate limits of the city of Seattle on two different nights with dancing parties on board. Mr. Ringler was arrested by city officials for operating a dance hall contrary to law, was fined in police court and upon appeal to the Superior Court, conviction was affirmed. Notices were published containing the following headlines: "Dance. Sea Lark Excursion. Seattle's new floating dance pavilion. Saturday evening, April 19. (Other dates were likewise given in other notices.) Government Inspected. Accommodates 1,000. Dock, Pier No. 9, Foot of Pike Street. 9 to 12 p. m. Olympic Serenaders. Tickets including checking, gents., 75c., ladies, 50c." The date of the license and the publication of these notices, after notice to cease operation of the dance hall, indicate a clear intent to ignore the city ordinances involved and to defy the city officials.

Fire Marshal's Action

Being apprised by one of his inspectors, of the hazardous condition existing on board the barge "Sea Lark," the fire marshal, accompanied by the chief building inspector of the Seattle building department, made a personal inspection of the vessel. This inspection revealed, among other defects, the following:

The superstructure, containing the two dance floors, was found to be of flimsy wooden construction. The upper dance floor was found to be decidedly unsafe and capable of sustaining a live load of but 25 pounds per square foot, when it should carry a live load of 100 pounds per square foot.

There were no safe means of egress provided in case of fire or panic. There were but two life boats and a small life craft, capable of accommodating a total of not more than 75 persons. Many of the life preservers were made of reed bottle covers, the canvas covers of several of these preservers being rotten.

The fire pump was dismantled and the fire hose rotten. There were no fire walls in the hold, which was one open area from end to end. Heating was by means of four wood or coal stoves, the smoke pipes being carried through the roof and walls, within one inch of flimsy wood construction. The electric wiring was old and the insulation rotted in many places. Electric fixtures were loose and in numerous places flimsy cloth bunting and dry cedar boughs were near or in contact with defective electric fixtures and the smoke pipes.

Scrap lumber, rubbish and other highly combustible materials in large quantities were stored in the hold. The large room in the hold, used as a receptacle for refuse from the kitchen, contained scrap paper, broken boxes and other highly combustible material.

The Fire Marshal immediately decided that the structure was a bad fire hazard and a menace to human life, and served notice on Mr. Ringler in November, 1924, that the vessel could not be operated as a dance hall within the city limits until completely remodeled and made safe. On the evening of May 17, 1925, following similar notices, Fire Marshal Laing directed that navigation be not interferred with, but that persons be not permitted to board the vessel, and with a corps of assistants, went to the dock and formed a line and permitted only Mr. Ringler the owner, and his crew to go aboard. Other persons present, who had assembled to go aboard for dancing, were kept from going aboard the vessel.

Legal Points Involved

Montrose M. Ringler, owner of the vessel, immediately applied to the United States District Court for a temporary injunction restraining Fire Marshal Laing from interfering with the operation of the barge "Sea Lark," pending hearing of a libel for $5,000 damages. At a hearing upon the prayer for an injunction, Judge Bourquin denied the temporary injunction pending a hearing of the matter on its merits.

At a subsequent hearing of this action upon its merits, in the United States District Court for the Western District of Washington, Northern Division, Mr. Ringler, as plaintiff, alleged the following cause of action: "that the United States has control of the navigable waters of the state, and that the city or the state, under its reserve police power, had no right to enact any law or ordinance, or to do any act repugnant to and opposed to the right granted under federal statutes on navigable waters; and that defendant acted without right." Disposing of this matter as to merits after trial, District Judge Jeremiah Neterer, on June 30, 1927, entered the following judgment:

"Federal inspection does not create a right. The barge is not a *steam vessel* nor a *sailing vessel*. Sec. 8172, C.S., (Sec. 4417, R. S., as amended), provides for legal inspection of 'the hull of each steam vessel' or 'the hull of each sail vessel.' The Building Code of Seattle defines a building as "any structure built for the support, shelter or enclosure of persons. . . . . And the same Ordinance, 31578, as amended, Section 32, defines a houseboat as a 'building constructed on a float, not equipped with any motive power.' The same ordinance makes it the duty of the Fire Marshal to notify every owner or lessee of violations of the provisions of the Building Code, and to cause the structure to be vacated, and that means of egress, standpipes, division of walls, fire doors, etc., shall be maintained in a usable and safe condition. Ordinance 67072 authorized the fire inspector to enter and examine any building, vessel, etc. That the structure was clearly a houseboat, it seems apparent, and being neither a *steam vessel* nor a *sailing craft*, government inspection avails nothing, and that the fire marshal was clearly right in preventing the inhabitants of the city to go aboard the scow as unsafe and dangerous to life. However, navigation of the vessel was not objected to, and admiralty jurisdiction for tort depends entirely on locality. See Emil Hoff v. Pac. Am. Fisheries, 284 Fed. 174; affirmed 291 Fed, 306; Also 270 Fed. 367, Phila. Wilmington & B. R. Co. v. Phila. & Havre de Grace Steam Towboat Co., 64 U.S., 209. The testimony is conclusive that what was done by defendant was upon land. The defendant, standing on the dock, merely induced persons from entering the barge because of its unsafe condition, in no sense a marine tort. Libel dismissed."

Ray Dumett, assistant corporation counsel, defended Mr. Laing and presented a very vigorous and able battle, the success of which is attested by the foregoing decision.

The barge "Sea Lark" is at this date moored to the shore of Lake Washington, outside the corporate limits of the city of Seattle, and has never operated within the city limits since May 17, 1925, the date when Fire Marshal Laing took such summary action to eliminate a dangerous life and fire hazard.

Thus another chapter is written in the great battle which fire officials are constantly waging in behalf of public safety; a great legal victory is gained; and Fire Marshal Robert L. Laing is in receipt of the praise and admiration of all law abiding citizens who honor a public official that has the courage of his convictions.

Funeral of Louis S. Ross

There was a large attendance at the funeral services for Louis S. Ross which were held at his late residence, 414 Walnut Street, Newtonville, Mass. Mr. Ross was the inventor of the Ross Thawing Device, an acetylene machine for thawing frozen hydrants which is now manufactured by the American-La France Fire Engine Company. He also invented the Ross steam engine and the red signal lights used on railroads. He was keenly interested in the fire service and had fire alarm tappers of the Newton, Waltham, and Boston departments installed in his home. He met death in an accident while experimenting with a new kind of railroad torpedo.

The service was conducted by the Rev. R. R. Hadley, pastor of the Newtonville Universalist Church. Assistant Chief Henry A. Fox, of the Boston Fire Department, was in general charge of the arrangements. Among the fire officials attending were Chief Daniel F. Sennott, of Boston; Chief Clarence R. Randlett, of Newton; Chief John W. O'Hearn, of Watertown; Chief W. H. Hill, of Belmont; Chief George L. Johnson, of Waltham; Chief Selden R. Allen, of Brookline; Supt. George L. Fickett and Asst. Supt. Richard Donahue, of the Boston fire alarm office and a detail of Newton firemen. A delegation was present from the Box 52 Association, of Boston, of which Mr. Ross was an honorary members. Burial was in the Newton cemetery.

HARRY BELKNAP.

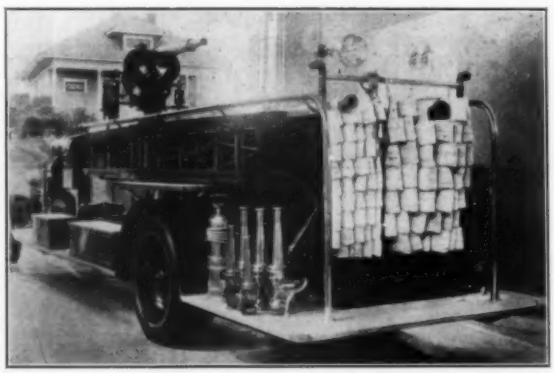
Riverhead, L. I., Chief Presented with Badge—Nathan T. Corwin, chief of the fire department in Riverhead, L. I., N. Y., for the past ten years was presented with a gold badge at a dinner given in his honor at the Riverhead Country Club. He has been a member of the department for the past thirty-three years.

Fire Boat Tender Mounted on Bus Chassis

Two fire boat tenders which are assigned to work in conjunction with the response of the fire boats in Los Angeles, Cal., have been constructed in the department's shop on Mack bus chassis. A third Mack bus chassis has been used to mount a salvage wagon body.

The equipment of the tenders consists of 950 feet of 3½-inch hose, 1,000 feet of 2½-inch hose, 250 feet of 1½-inch hose, brass nozzles, and various size connections. The apparatus is equipped with ladders, searchlights, chemical extinguishers and a turret nozzle. The chassis has 196-inch wheel base.

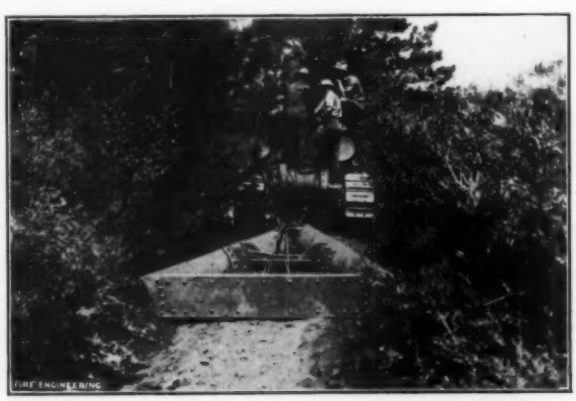
The bodies were built under the direction of Edward Hendricks, chief master mechanic, and James Ainsworth, shop superintendent, in accordance with specifications drafted by



Rear View of Fireboat Tender Mounted on a Bus Chassis. Note the Number of Large Nozzles on the Running Board, and the Large Hose Carrying Capacity of Body.

Chief Ralph J. Scott. The center of gravity of the apparatus is very low so that the apparatus can ride easy over the rough water front roads at a greater speed.

Where the fire is along the water front but too far inland to be fought effectively from the fireboat, the tender lays a line to the boat with the 3½-inch hose and connects it to the turret nozzle. The turret is capable of discharging a good stream of water a distance of 150 feet and at a great elevation.



Demonstrating that Fire Breaks Are Easily Made

Forestry officials from Washington and San Francisco were elated when they learned at a demonstration that fire breaks could be easily made by the device illustrated. The demonstration was held at Barley Flats back of Mt. Wilson. One of the present difficulties in fighting brush fires, is the inability to get a sufficient number of men to make fire breaks fast enough to head off the fire. The mechanical device is capable of going through the heavy brush that is common in southern California.

New York City Promotes 19 Men—Commissioner John J. Dorman of New York city announced the appointment of seven new captains and twelve lieutenants. Fifty firemen were appointed on probation from an eligible list which expired on July 5.

Rubbish in a Junk Yard was Responsible for this Conflagration in Montgomery, Ala., which Destroyed 22 Buildings, and Badly Damaged Many Others. This View of the Fire in Progress was Taken from an Airplane

IGNITED RUBBISH IN JUNK YARD CAUSES LOSS OF 22 BUILDINGS

Conflagration at Montgomery, Ala., Necessitates Outside Aid—High Wind Endangers City for a Time—No Lives Lost

A CONFLAGRATION which destroyed twenty-two buildings in Montgomery, Ala., and caused an estimated loss of $1,500,000, started at about 1 p. m., June 4. The fire started near an open frame shed in a junk yard and was discovered by employees on the fourth floor of the Derr Drug company, about one block north, who notified the fire department by telephone at about 1:02 o'clock. Several box alarms were also received by the fire department.

The fire department, which is full paid, consists of a chief, assistant chief and 56 officers and men. It is equipped with four pumpers, with combined capacity of 3,250 gals. per minute, two combination chemical and hose cars, one aerial and city service truck, with four steamers in reserve. At the first alarm, three pumpers, one chemical and hose and one ladder truck responded. On the arrival of the assistant chief a general alarm was sent in, calling out all apparatus. At 2 p. m. the chief, who had been out of the city, returned, and took command.

When it was evident that the blaze was getting beyond the local department, aid was asked for and the following responded:

Maxwell Aviation Field (U. S. A.) near by, sent a pumper, hose, a fire company and a detachment of men, arriving at 2 p. m., and rendered service.

Selma, Ala., about 50 miles, sent a pumper, hose and men, arriving at 3 p. m., and rendered aid.

Wetumpka, Ala., about 20 miles, sent hose truck and men, arriving between 3:30 and 4 p. m., and rendered aid.

Troy, Ala., about 52 miles, sent a pumper, hose and men, but arrived too late to assist.

Birmingham, Ala., about 100 miles, sent chief and assistant chief and was sending equipment, but fire was under control before arrival and the equipment was turned back before reaching Montgomery.

For a time it looked as if the entire city might go. No lives were lost.

The engineering department of the South Eastern Underwriters' Association has made a report upon this fire, and the following are some of the most important parts of this report:

"On account of frequent fires in the junk yard, to burn off insulation from wire and to destroy other waste materials, the fire in the yard was not noticed by the employees or others in the vicinity, until discovered as mentioned above. Therefore, it is believed from the progress of the fire at the time of the arrival of the fire department, that five minutes or more elapsed between the time the fire was started in the waste paper and the time the fire department was called by telephone. It is also believed that from 10 to 15 minutes time was wasted before water was played on the fire.

"The part of the yard, where the fire originated, was piled about 6 feet high with waste paper, oil-soaked rags, crates, burlap and other flammable materials. It was stated upon good authority that a one-horse wagon load of waste paper was being unloaded and the driver, after lighting a cigarette, threw the lighted match beneath the wagon, igniting the waste paper. The fire spread so rapidly that the horse was burned to death and the wagon destroyed.

"From beneath the wagon, where it started, the fire spread rapidly to the frame junk shed and the frame, metal-clad storage shed of the Cudahy Packing Company. From the frame sheds the fire was communicated to two furniture trucks in the alley and to the rear of five 3-story brick, ordinary joisted mercantiles, through unprotected openings, which included a heavily stocked retail furniture store and warehouse, from which the fire spread rapidly and soon became general in that vicinity.

"When the fire progressed to this stage the fire department arrived on Lee street and laid hose lines from pumpers and hydrants. The assistant chief of the fire department stated that five sections of hose burst as soon as the apparatus was put in service. The bursting of the hose caused considerable delay, which allowed the fire to gain further headway before hose streams were finally brought into use. At this time, the assistant chief of the fire department, who was in charge, realized his inability to cope with the fire and turned in a general alarm for all apparatus to respond.

"The additional apparatus was ordered stationed in the vicinity of Commerce and Bibb streets and immediately put two streams into play on the buildings then burning in the path of the fire, breaking glass from the windows. The fire was of such intensity that the firemen were forced to abandon the hose streams and move the apparatus, thus causing a delay of about 15 minutes during which time the fire swept to the buildings 120 feet across Commerce street by a wind from the west, blowing from 12 to 20 miles per hour. It also spread north and south on the west side of Commerce street to adjoining buildings, by frame awnings.

"The spread of the fire to the north was stopped by the sprink-

lered buildings of the Schlesinger Candy Company; to the south by the Gay-Teague Hotel, a building of fire-resistive construction.

"While the hose streams, mentioned above, were out of commission, the fire communicated to the Mercantile Paper Company, Seligman & Marx Wholesale Grocery Company and to the Gannon Auto Accessory Company, which was protected by an automatic chemical extinguisher system, which operated, but was soon exhausted.

"The Barnett Hardware Company, a sprinklered building, stopped the spread of the fire to the north on the east side of Commerce street; the Imperial Hotel, a four-story brick, joisted, sprinklered building, stopped the spread of the fire to the south on the east side of Commerce street. However, the Imperial Hotel is practically a total loss on account of the fire communicating to the frame mansard roof. The manually operated open sprinklers, which protected the exposed windows on the north and east sides, were not used, and it is believed that if this protection had been used the damage would have been considerably reduced.

"The operation of the sprinklers in the Imperial Hotel on the south and Barnett Hardware Company on the north narrowed the course of the fire in the path of the wind to a point terminating at the north-west corner of Coosa and Bibb streets, where

Courtesy, W. W. Whorley

Two Views of the Big Fire in Montgomery, Ala., Showing the Nature of the Buildings Destroyed

the concentrated efforts of the fire department finally stopped the fire.

"After the fire was under control, some unknown person, without the permission of the civil authorities, placed and exploded a heavy charge of dynamite on the sidewalk against east wall of the Montgomery Motor Truck building, located on the north-west corner of Coosa and Bibb streets. The explosion did not demolish the building, but resulted in serious damage to glass and other fragile property in the vicinity.

"Due to the delay in turning in alarm, the rapid spread of the fire before the arrival of the fire department, the bursting of five sections of hose, delaying the work of the firemen at least 15 minutes, it is believed the fire had gained such headway that the fire department became demoralized to such an extent that they lost control of he fire.

"Five pumps were operated by the water department, delivering between 10,000 and 11,000 gallons per minute, with pressure from 108 pounds at 1:10 p. m. to 72 pounds at 6 p. m., with domestic consumption of 4,500 to 5,000 gallons per minute, which would average about 5,000 gallons per minute for fire protection.

"This fire serves to emphasize the following: The hazard of permitting such occupancies as junk shops and junk yards in mercantile districts, or within the fire limits, and also emphasizes the consequences which are likely to result from failure to promptly notify the fire department in case of fire. The importance of testing and discarding faulty hose."

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands.

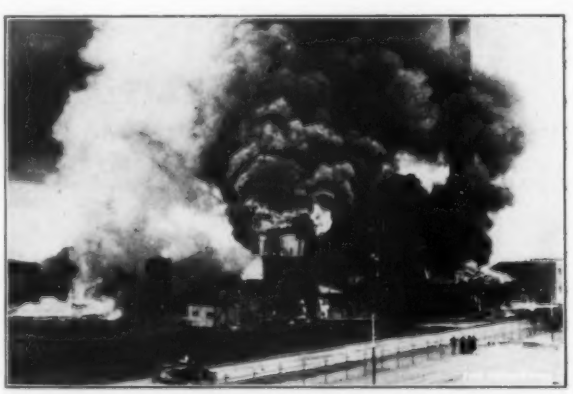
Week Ending July 15

LAWRENCE, MASS.—Property of Webster Hay & Grain Co...	80
BUFFALO, N. Y.—20 Ripley St. and adj. property damaged...	25
MERCED, CALIF.—Warehouse of H. K. Huls damaged.....	65
DENVER, COLO.—Boiler-house, National Jewish Hospital....	25
CAMPBELL, NEBR.—Derrick and equipment, U. S. Drilling Co.	65
PHILADELPHIA, PA.—J. B. Shoemaker's Sons Box Factory..	65
CHICAGO, ILL.—Garage and 50 automobiles destroyed.....	165
NEW ORLEANS, LA.—Fur store of B. Graham damaged.....	40
BRISTOL, COLO.—Postoffice and adjoining property.....	25
DULUTH, MINN.—Bldg. occupied by Pease Hardware Co.....	30
CUSHING, OKLA.—Plant of Cushing Oil & Refinery Co.....	40
SHARON, PA.—Bldgs. in business district damaged.....	80
TUSCALOOSA, ALA.—Several business establishments.....	150
HEBRON, CONN.—Farm bldgs. of J. Giordano destroyed.....	25
WARREN, ARK.—Prop. of Dr. H. Rhinehart and King Evans..	25
CHICAGO, ILL.—219 W. Lake St., occupied by Sunder Laner Co.	80
WYNNDEL, B. C.—Finished lumber of J. B. Winlaw Co.....	50
CHICAGO, ILL.—Oil tanks of Wm. Hayward Co.....	60
LAKE MILLS, WIS.—Barn on farm of F. B. Fargo destroyed.	30
TAMAQUA, PA.—Plant of Saylor Baking Co. damaged.....	40
O'HARA, PA.—Boyd Mansion, Montrose Hill, destroyed.....	80
BOSTON, MASS.—Yard bldgs. of B. & M. R. R. destroyed....	45
VALPARAISO, IND.—Warks Hardware Store damaged.....	40
GLENDALE, CALIF.—Factory of Baird & Bell Co.....	75
TERRE HAUTE, IND.—Phoenix Country Club destroyed.....	25
NORTHBRIDGE, MASS.—St. Peter's Catholic Church.....	25
LYNCHBURG, VA.—Army & Navy Sales Co., Main St.....	25
ENDERSONVILLE, N. C.—Terrace dance pavilion destroyed...	40
ELK CITY, OKLA.—Herring & Young store damaged.....	60
DENTON, MD.—Concord Camp Grounds and cottages.....	40
NEW YORK, N. Y.—Warehouse of H. I. Stettler damaged.....	350
ST. LOUIS, MO.—Residence of J. Palermo at Jennings.....	25
PLAINFIELD, CALIF.—Property of Mrs. C. Purrington.....	40
PLEASANT HILL, MO.—Residence of W. N. Robinson destroyed	60
LOS ANGELES, CALIF.—Plant of Union Oil Co. damaged....	25
JEANNETTE, PA.—McKee Hotel destroyed	115
KINGWOOD, W. VA.—Mine tipple of Barnard Coal Company..	35
LITCHFIELD, MICH.—C. E. Parson's bakery and adj. property	80

Week Ending July 22

NORPHLET, ARK.—Business section damaged.....	25
DALLAS CITY, ILL.—Curtis handle factory destroyed.....	40
TORONTO, ONT.—Rex Theatre damaged.....	25
PORT RICHMOND, PA.—Coal trestle of Reading R. R. damaged	80
SUTHERLAND SPRINGS, TEX.—Baptist Church and adj. residences	25
VANCOUVER, B. C.—Plant of British Col. Roofing Co.....	25
BROOKVILLE, PA.—Mill of Van Lear Bros. destroyed.....	80
CHICAGO, ILL.—Four story bldg. West Lake Street.....	25
BINGHAM, UTAH.—Five hotels destroyed.....	800
CHICAGO, ILL.—Bldg. at 3043 West Harrison St., destroyed	25
WEST BLOCTON, ALA.—Masonic temple and 33 additional bldgs.	325
MARTIN, TENN.—Residence of J. M. Gardner.....	25
CLEVELAND, O.—Apartment at Ludlow & Buckeye Roads, S. E.	80
YORK, PA.—Warehouse of L. Lavetan & Sons damaged.....	40

(*Continued on page* 826)



Refinery Explosion and Fire Results in Loss of Fourteen Lives

The disaster was caused by the blowing up of the high pressure chamber of a still in the oil refinery at Parko, Wyo., which set fire to nine other stills and a storage plant. Fourteen bodies were taken from the ruins and it is thought that two others were so badly burned as to be unrecognizable. The loss was estimated at $500,000.

WITH THE EDITOR

Where in 1928? An interesting contest may be expected when it comes to selecting the city for next year's convention. Each year the number of municipalities making a bid for the International Association of Fire Chief's annual meeting has been increasing. Last year no less than six entered their invitations, two of which had previously been on the hopeful list.

Indianapolis, for example, has tried very earnestly to secure the meeting for the past several years, going to the trouble of bringing to each meeting of the association its Police Department Band to stir up interest.

That they missed getting last year's convention or the current meeting was to be expected, for preceding the New Orleans meeting the convention assembled in Louisville which was too near to Indianapolis for the latter city to be considered. After meeting at New Orleans it was a question of whether to come back to the central part of the country or go west. Not having been west for several years, a western city was chosen.

From a sympathetic standpoint, Indianapolis has a better chance this year than ever before for winning. Persistency in the past few years in following up the Association cannot well be overlooked unless a city with much stronger attractions and at least as strong a convention bureau enters the field.

Then, too, there is Cincinnati which also extended an invitation last year and which so graciously backed out at New Orleans when it was found that Portland was in line for this year's meeting.

Having sectional divisions and affiliated organizations in all parts of the country, it may be expected that in the future the association will have to move from section to section in holding its annual meeting in order to satisfy the various divisions. Just where the next move will be made is a question to be decided at Portland.

But no matter from which angle the subject is to be approached, one thing remains certain, and that is that there is going to be an interesting and warm contest for the 1928 convention.

The I. A. F. C.—Its Future As the 55th Annual Convention of the International Association of Fire Chiefs arrives, evidence of real progress is becoming conspicuous on all sides. Probably the greatest accomplishment of recent months has been the action of the New England Association of Fire Chiefs, with its 600 members, in voting to affiliate with the International body.

What this attainment alone will mean cannot be overestimated. The New England Association has knit those in the New England States interested in fire protection into a very strong body, and what they have done in the past few years is well known in fire department circles. To have such a body affiliated directly with the International Association augurs well for the future of the International.

Thanks to the new membership arrangement, a chief does not have to attend conventions to receive its major benefits. Chiefs of small fire departments, too, now find membership in the organization worth while, for through the agency of the Association's journal the work of the association is brought right home to them.

It will not be at all surprising if reports presented at the Portland meeting show a growth in membership of 300 per cent during the past year, for in addition to the affiliation of old sectional organizations the several new sectional associations are showing sturdy growth.

With this fundamental requirement—membership—behind the association, it will be prepared to do big things.

The ground work also includes a mighty fine lot of publicity which the association has secured through its endorsement of "The Fire Brigade," and through the billboard poster advertising which was conducted early this year. As a matter of fact there are but few people in the country who have not seen the name of the International Association of Fire Chiefs either on the moving picture screen or on bill boards.

There is lots of work ahead of the Association and no time could be more opportune than the present for embarking on the big plans the association officers have in mind.

With the enthusiasm of the in-coming administration, and the experience of the past administration, conditions are ideal for the accomplishment of worth while work. The International Association has made a fine start. Let the progress continue!

Convention Facilities For the first time in many years convention facilities are all that could be desired.

The meeting hall and exhibit hall in the same building are certainly going to work up interest in both the exhibits and the technical features of the program. Manufacturers are going to be satisfied at the attention shown their exhibits and, in fact, it is hard to conceive cause on any side for dissatisfaction.

The Portland Convention Bureau is certainly to be commended upon its thoroughness in providing facili-

ties for this year's convention. And, speaking of exhibits, our Chairman of the Exhibit Committee, Chief Albert Herring, is also in line for commendation.

Although many manufacturers hesitated to send apparatus across the country, or over great distances to have an exhibit at Portland, Chief Herring would hear no excuses and set out with the intention of building a record display at Portland, and this he has accomplished. Only those who have served on Exhibit Committees before can appreciate the gigantic task which he has so well accomplished.

And incidentally, it only goes to show that it does not require the chief of a big city to do big things for the association. Some of the best workers come from small municipalities. Thus the future of the International Association of Fire Chiefs does not depend only upon the chiefs of large cities, but upon every fire chief in this country no matter how big or how small a city or town he represents. And that's one of the redeeming features of our new membership arrangement whereby the association can interest the volunteer fire chief as well as the chief of the big metropolitan department.

In getting back to the subject, the Portland Convention and the arrangements provided therefore can be taken as a example toward which future convention cities may well strive.

Amusement Park Fires

It is an interesting coincidence, but one of surprising regularity, that most summer resort and amusement park fires occur early in July. As to why these fires should happen just at this particular season of the year is explained by two different theories.

The first is that on or about July 4 the busiest period is encountered which means that the help will be working at topmost speed to accommodate customers. As a result of this rush, ordinary safety measures are overlooked, such as the proper disposal of rubbish, proper care of electric wiring defects which might develop, and proper attention to heating devices. In addition to this, a great rush of trade in many types of concessions represents overloading of the devices employed. As most of these devices are driven by electricity, overloading may well be held responsible for a number of the fires. Also, congestion of crowds around the various booths and stands increases the danger of fire through cigarette butts and other causes incidental to smoking.

All of the above sounds reasonable, and feasible. There can be but little doubt that each of the above named causes is responsible for a certain percentage of the fires.

But there is another class of fire preventionists who holds that most of these fires occurring around the 4th of July are the direct result of unsatisfactory business prior to that time.

Here is the way the situation is explained: The various concessioners rent their spaces for the season, which is comparatively short—extending possibly from May 30 to Labor Day. Rental money is paid in advance for half the period and the second payment comes due around July 4.

If the weather has been bad up to July 4, many concessioners are not able to meet their second payments. They have, in many instances, put all their money in getting equipment in shape for their display, or concession, and this investment will be held by lien until the balance of the rent is paid.

Under these conditions there seems but one easy way out of the difficult situation—a fire.

The fact that these fires all occur on or about July 4 when the second payment is about due would seem to indicate that there might be a little truth in the claim of incendiary fires. On the other hand, it can hardly be believed that many individuals would resort to such a dangerous practice as burning to save their initial investment and to find a way out of having to make final payment on their lease.

Disregarding, for the time being, the possible causes of such fires, the fact remains that they are most numerous around the July 4 holidays. And it well behooves every fire chief having within his city an amusement park to be on the alert for a fire of this type at the season mentioned. Doubling up on the inspection of such premises at this season would no doubt go a long way toward heading off fires. Vigorous enforcement of fire ordinances is justified, particularly in view of the type of customer to be dealt with as well as the extremely hazardous nature of the property involved.

During the past month the country has experienced a great number of disastrous amusement park fires, and even at this early date it would be well for fire department officials to make plans for meeting the situation next year when similar conditions may develop.

One Man Dead and Fifty Cars Destroyed in Garage Fire

A garage on South State street, Chicago, was completely destroyed, one man, a cleaner, was apparently trapped in a car while asleep, and some fifty autos were burned, recently, in the fire shown in the illustration. A woman had a narrow escape from death in the building. The loss was estimated at $150,000.

CHIEF THOMAS R. MURPHY
President
San Francisco, Cal.

CHIEF ROSS B. DAVIS
First Vice-President
Philadelphia, Pa.

CHIEF JOHN M. EVANS
Second Vice-President
New Orleans, La.

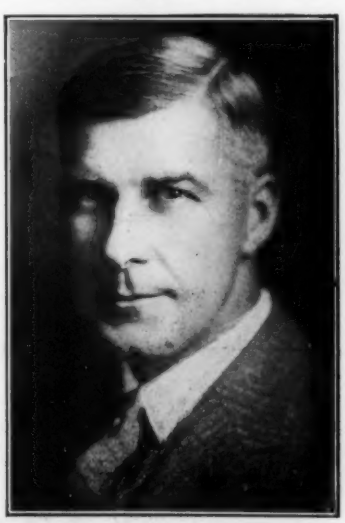
CHIEF JOHN KENLON
Director
New York, N. Y.

CHIEF JAMES J. MULCAHEY
Secretary
Yonkers, N. Y.

CHIEF PETER B. CARTER
Treasurer
Collingswood, N. J.

CHIEF RALPH J. SCOTT
Director
Los Angeles, Cal.

EX-CHIEF JOHN W. WRAY
Director
El Paso, Tex.



JAY W. STEVENS
Executive Secretary
San Francisco, Cal.

OFFICERS OF THE INTERNATIONAL ASSOCIATION OF FIRE CHIEFS

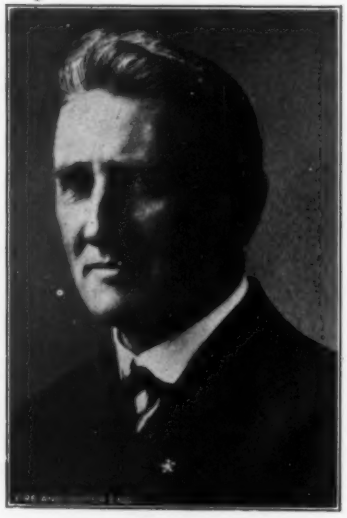
CHIEF JOHN C. MORAN
Revision of Constitution & By-Laws Comm.
Hartford, Conn.

CHIEF ALBERT HERRING
Chairman, Exhibit Committee
Murphysboro, Ill.

CHIEF J. N. SULLIVAN
State Vice-President
Utica, N. Y.

CHIEF GEORGE W. HEDDEN
Revision of Constitution & By-Laws Comm.
Buffalo, N. Y.

CHIEF J. M. DUNPHY
Exhibit Committee
Sacramento, Cal.



CHIEF JAMES ARMSTRONG
Fire Waste Contest Comm.
Kingston, Ont.

GEORGE F. COBB
Traffic Manager
Boston, Mass.

CHIEF JESSE A. HUTSELL
State Vice-President
Indianapolis, Ind.

CHIEF E. A. McGRANAHAN
State Vice-President
Wheeling, W. Va.

COMMITTEEMEN AND STATE VICE-PRESIDENTS, I. A. F. C.

CHIEF WM. J. LUTZ
State Vice-P-es.
Wilmington, Del.

CHIEF WM. A. SLOAN
State Vice-President
Sioux Falls, S. D.

CHIEF JOHN F. HEALY
Ex-President
Denver, Colo.

CHIEF WILLIAM TOOMEY
Revision of Constitution & By-Laws Comm.
Chattanooga, Tenn.

CHIEF C. W. RINGER
Ex-President
Minneapolis, Minn.

CHIEF FILMORE TYSON
Ex-President
Supt. Fire Protection, Olds Motor Wks.
Lansing, Mich.

CHIEF P. McCARTIN
State Vice-Pres.
Colorado Springs, Colo.

CHIEF H. R. MacMILLAN
State Vice-President
Jacksonville, Fla.

CHIEF A. B. CANFIELD
State Vice-President
Pocatello, Idaho

COMMITTEEMEN, STATE VICE-PRESIDENTS AND EX-PRESIDENTS, I. A. F. C.

CHIEF E. V. DONOVAN
State Vice-President
Greenville, Miss.

CHIEF DANIEL E. JOHNSON
Comm. on Co-Operation with State V. P.
Bridgeport, Conn.

CHIEF R. B. HAWCROFT
State Vice-President
Reno, Nev.

CHIEF JOHN B. KENNEDY
State Vice-President
Augusta, Ga.

CHIEF T. J. GOUGH
State Vice-President
Cuyahoga Heights, O.

CHIEF PETER STEINKELLNER
State Vice-President
Milwaukee, Wis.

CHIEF RAY TILLER
State Vice-President
Waterloo, Ia.

CHIEF ARTHUR W. SPRING
State Vice-President
Laconia, N. H.

CHIEF W. R. COLIN
State Vice-President
Bristol, Tenn.

COMMITTEEMEN AND STATE VICE-PRESIDENTS I. A. F. C.

CHIEF CHARLES AULT
State Vice-President
St. Louis, Mo.

CHIEF W. A. WHITE
State Vice-President
Regina, Sask.

CHIEF EDWARD PLATT
State Vice-President
Decatur, Ill.

CHIEF J. H. CARLISLE
State Vice-President
Vancouver, B. C.

CHIEF OLIVER T. SANBORN
State Vice-President
Portland, Maine

CHIEF A. S. BROWNWELL
State Vice-President
Wichita, Kans.

CHIEF GEO. M. KELLOGG
Ex-President
Sioux City, Ia.

CHIEF SAM B. BOYD
Ex-President
Knoxville, Tenn.

CHIEF OFFICER M. W. PETT
State Vice-President
Shanghai, China

STATE VICE-PRESIDENTS AND EX-PRESIDENTS, I. A. F. C.

CHIEF C. J. DeFIELDS
State Vice-Pres.
Windsor, Ont.

CHIEF C. S. HAFER
State Vice-Pres.
Little Rock, Ark.

CHIEF S. C. BOAZ
State Vice-Pres.
Henryetta, Okla.

CHIEF J. W. CHURCHILL
State Vice-Pres.
Halifax, N. S.

CHIEF L. F. MITCHELL
State Vice-Pres.
Danville, Va.

CHIEF OSCAR HIESTAND
State Vice-Pres.
Casper, Wyo.

CHIEF W. J. NEMECK
State Vice-Pres.
Douglas, Ariz.

CHIEF W. S. KNIGHT
State Vice-Pres.
Salt Lake City, Utah

CHIEF H. E. HAWKINS
State Vice-Pres.
Yakima, Wash.

CHIEF T J. FITZGERALD
State Vice-Pres.
Naugatuck, Conn.

CHIEF H. E. NISSEN
State Vice-President
Winston-Salem, N. C.

CHIEF A. M. JAEGER
State Vice-Pres.
Ecorse, Mich.

STATE VICE-PRESIDENTS INTERNATIONAL ASSOCIATION OF FIRE CHIEFS

CHIEF JOSEPH WOODS
Exhibit Committee
Renton, Wash.

CHIEF MARK RYAN
Revision of Constitution and By-Laws Comm., Redwood City, Calif.

CHIEF WM. F. DALEY
Chairman, Revision of Constitution and By-Laws Comm.
Brockton, Mass.

CHIEF THOS. L. COYLE
Revision of Constitution and By-Laws Comm.
Paterson, N. J.

CHIEF THOS. M. CARLON
State Vice-Pres.
Bend, Oreg.

CHIEF F. C. DECKER
State Vice-Pres.
Westfield, N. J.

CHIEF R. N. O. HARRINGTON
State Vice-Pres.
Montreal, Quebec

CHIEF D. N. SCHNEIDER
Exhibit Committee
San Rafael, Cal.

CHIEF R. A. BOGAN
State Vice Pres
Baton Rouge, La.

CHIEF A. J. BAKER
State Vice-Pres.
Lewiston, Mont.

CHIEF R. C. HOENICA
State Vice-Pres.
Cumberland, Md.

CHIEF D. J. NOONAN
State Vice-Pres.
Valleio. Cal.

COMMITTEEMEN AND STATE VICE-PRESIDENTS I. A. F. C.

H. L. HORNING
President
Waukesha Motor Co.

C. A. TREPHAGEN
Sales Manager
Reo Motor Car Co.

CHAS. H. FOX
Pres. & Gen. Mgr.
Ahrens-Fox Fire Engine Co.

JOHN P. AHRENS
Vice-Pres. & Sales Mgr.
Ahrens-Fox Fire Engine Co.

WALTER KIDDE
President
Walter Kidde Co., Inc.

WALTER H. FREYGANG
Manager
Walter Kidde Co., Inc.

P. W. EBERHARDT
Sales Manager
Electrical Fire Prot. Equip.
Walter Kidde Co., Inc.

E. H. KELLOGG
Sales Manager
Mine Safety Appliances Co.

JAMES ROY DAVIS
General Manager
Lally Fire Appliance Co.

JOHN J. LALLY
President
Lally Fire Appliance Co.

JOSEPH F. LALLY
Vice-President
Lally Fire Appliance Co.

PAUL H. CHAPMAN
The National Electric Specialty Co.

R. J. WALL
President
The National Electric Specialty Co.

D. S. ELLIOTT
Maine Sales Manager
Southworth Machine Co.

C. H. SMITH
Sales Mgr.
Southworth Machine Co.

FIRE DEPARTMENT EQUIPMENT MANUFACTURERS AND REPRESENTATIVES

J. F. LOGENBELL
Iowa Representative
W. S. Nott Co.

E. H. GEORGE
President
W. S. Nott Co.

E. M. GOLDSBOROUGH
Vice-Pres. & Gen. Mgr.
W. S. Nott Co.

E. P. BROWNING
Mgr. Apparatus Sales
W. S. Nott Co.

H. D. ELWOOD
Wisconsin Rep.
W. S. Nott Co.

W. H. GRIFFIN
Southern Minnesota Rep.
W. S. Nott Co.

W. E. McGRIFFIN
Fire Hose Division
W. S. Nott Co.

JAMES J. MATHENY
Kansas and Missouri Rep.
W. S. Nott Co.

J. D. DONALD
North & South Dist. Rep.
W. S. Nott Co.

JOSEPH H. ELGET
Representative
W. S. Nott Co.

J. S. SMITH
Mgr Fire Department Sales
Hendrie & Bolthoff M. & S. Co.

W. R. PIRSCH
Vice-President
Peter Pirsch & Sons Co.

PETER PIRSCH
President
Peter Pirsch & Sons Co.

J. GOSSNER
Eastern Manager
Peter Pirsch & Sons Co.

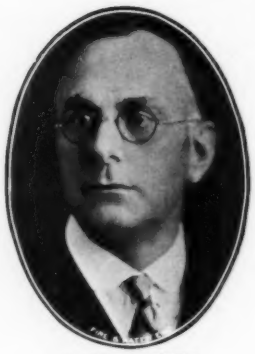
W. E. MILLER
President
Combination Ladder Co.

FIRE DEPARTMENT EQUIPMENT MANUFACTURERS AND REPRESENTATIVES

JONAS R. SMITH
Philadelphia Manager

R. W. JOYNER
Dallas Manager

H. F. GOBERT
Kansas City, Mo., Manager



L. M. GOSNEY
Los Angeles Manager

P. O. HEBERT
Southern Mgr., Atlanta

I. H. GREEN
Vice-President

FRED E. BENSEN
Mgr. Metropolitan Dist.

G. F. HAND
Chicago Manager

W. P. BURKE
Syracuse Manager

I. W. DASHIELL
Minneapolis Manager

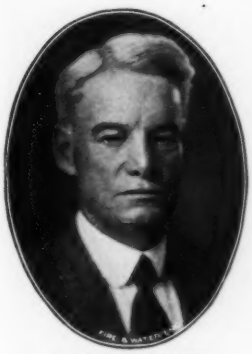
H. H. ALVIS
Detroit Manager

S. E. MATHENY
Des Moines Mgr.

JULIUS PEARSE
Denver Manager

H. F. PRATT
Columbus, O., Manager

OFFICERS AND REPRESENTATIVES OF THE EUREKA FIRE HOSE MFG. CO.



A. W. ARMATAGE
President
Northern Fire Apparatus Co.

L. O. KUHN
Vice-Pres. and Gen Mgr.
Northern Fire Apparatus Co.

ALEXANDER CAMPBELL
Secretary and Treasurer
Northern Fire Apparatus Co.

J. M. SHEARER
Sales Manager
Northern Fire Apparatus Co.

C. P. SMITH
Gen. Sales Mgr.
Foamite-Childs Corporation

W. J. CHILDS
President
Foamite-Childs Corporation

F. M. WATTERS
Vice-Pres. and Gen. Mgr.
Foamite-Childs Corporation

"ABE" BROWN
N. Y. District Manager
Foamite-Childs Corporation

J. C. SCHELLIN
Secretary and Manager
Akron Brass Mfg. Co.

WM. SCHLEINITZ
Sales Representative
Larkin Mfg. Co.

G. H. LITCHFIELD
Mgr. Motor Apparatus Sales
Foamite-Childs Corporation

A. O. BONIFACE
Asst. General Manager
Foamite-Childs Corporation

CHAS S. BALL
Sales Representative
Greenfield Tap & Die Corp.

L. C. MOSS
Sales Manager
Jaeger Portable Power Corp.

W. F. HILKER
President
Signal Shirt Company

W. A. OLEN
President
Four Wheel Drive Auto Co.

FIRE DEPARTMENT EQUIPMENT MANUFACTURERS AND REPRESENTATIVES

L. E. LOWRY
Sales Manager Central States

FRANK F. STOVER
Sales Manager North Central States

F. M. CLEMENTS
Sales Manager Pacific Coast States

A. L. TINKER
Sales Manager Middle Atlantic States

V. C. STANLEY
President and General Manager

A. D. WHEELER
Sales Manager New England States

T. TORREY
Special Sales Manager

CHAS. F. MAULEN
Sales Manager Southwestern States

CHAS. BERST
Sales Manager Southeastern States

OFFICERS AND REPRESENTATIVES OF THE GAMEWELL CO.

M. J. GRACE
Southern Sales Rep.
Harrington-Seaberg Corporation

SEVERIN SEABERG
President-Treasurer
Harrington-Seaberg Corporation

F. H. HARRINGTON
Secretary
Harrington-Seaberg Corporation

E. E. SWEET
Northwestern Sales Rep.
Harrington-Seaberg Corporation

R. I. GERRISH
Minnesota Sales Rep.
Harrington-Seaberg Corporation

L. C. BISHOP
California Sales Rep.
Harrington-Seaberg Corporation

C. W. MITCHELL
Eastern Sales Rep.
Harrington-Seaberg Corporation

A. B. WHITE
Massachusetts Sales Rep.
Harrington-Seaberg Corporation

HERBERT INGERSOLL
Special Representative
Woodhouse Mfg. Co., Inc.

GEO. J. KUSS
Vice-President & Treasurer
Woodhouse Mfg. Co., Inc.

D. A. WOODHOUSE
Pres. & General Manager
Woodhouse Mfg. Co., Inc.

CHRIS. H. HASSELHUHN
Northern New Jersey Rep.
Woodhouse Mfg. Co., Inc.

WALTER M. DAWKINS
Representative
Woodhouse Mfg. Co., Inc.

FRANK A. HOWLAND
Representative
Woodhouse Mfg. Co., Inc.

LOUIS E. BAUER
Chairman Executive Com.
Indian Motocycle Co.

W. S. BOUTON
Manager of Municipal Sales
Indian Motocycle Co.

FIRE DEPARTMENT EQUIPMENT MANUFACTURERS AND REPRESENTATIVES

W. H. DEITCH
Chicago Branch Office

DON. GREEN
Chicago Branch Office

A. S. AUNGST
Chicago Branch Office

JAS. E. CHALFANT
York, Pa., Branch Office

E. C. WATSON
Chicago Branch Office

ROY E. NELSON
Sales Mgr., Howard Cooper Corp., Portland, Ore. Representatives for Ore., Wash., Idaho, and Alaska.

V. H. BROWN
Vancouver Branch Office

F. B. TANNER
Toronto Branch Office

JOHN W. GREENE
Pittsburgh Branch Office

GEO. L. AVERY
San Francisco Branch Office

R. G. SHIFFLER
Kansas City Branch Office

GLENN T. SCOTT
Kansas City, Mo., Branch Office

G. E. HERALD
Los Angeles Branch Office

RALPH L. SMITH
Phila. Branch Office

W. W. WITHERS
Baltimore Branch Office

JOS. A. WEBBER
Boston Branch Office

A. M. DONAHER
Boston Branch Office

H. J. LOVELL
Boston Branch Office

REPRESENTATIVES OF THE AMERICAN-LAFRANCE FIRE ENGINE CO.

G. E. THOMAS
Canadian Mgr.

JULIUS PEARSE
Mgr. Denver Branch Office

HUGH LOGAN
Mgr. Sundry Sales

A. G. SULLIVAN
Apparatus Sales Dept.

P. O. HEBERT
Southern Mgr., Apparatus Sales

E. C. KEATING
Vice-Pres. in Charge of Sales

C. B. ROSE
President

FRED FISCHER
Asst. Sales Mgr.

R. D. HAZZARD
New York Branch Office

W. E. BIDEKER
Sales Rep. for Texas, Okla. & Ark.

R. W. JOYNER
Sales Rep. for Texas, Okla. & Ark.

C. D. STEWART
New York Branch Office

G. E. BECHET
New York Branch Office

O. F. BEUTELL
New York Branch Office

F. V. WILSON
New York Branch Office

J. W. KNOBLOCK
New York Branch Office

OFFICERS AND REPRESENTATIVES OF THE AMERICAN-LAFRANCE FIRE ENGINE CO.

H. M. FAUST
Philadelphia Rep.
Buffalo Fire Appliance Corp.

LESTER W. YOUNG
Asst. to Pres.
Buffalo Fire Appliance Corp.

DANIEL McALLISTER
Southwestern Rep.
Buffalo Fire Appliance Corp.

LEON COMMERFORD
Washington, D. C., Rep.
Buffalo Fire Appliance Corp.

RALPH R. YOUNG
Secretary
Buffalo Fire Appliance Corp.

GEO. R. STEPHENS
President
Buffalo Fire Appliance Corp.

EDWIN ZURBRICK
Treasurer
Buffalo Fire Appliance Corp.

DONALD MILLER, JR.
Western Pa. Rep.
Buffalo Fire Appliance Corp.

W. R. EVANS
Eastern Pa. Rep.
Buffalo Fire Appliance Corp.

A. CASE
Western New York Rep.
Buffalo Fire Appliance Corp.

REGINALD S. KNOTHE
Eastern New York Rep.
Buffalo Fire Appliance Corp.

ARTHUR H. BLANCHARD

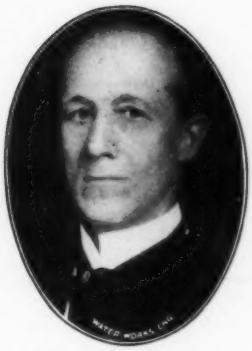
JIM SHIRREFFS
President
S & M Lamp Co.

I. L. SCHWARTZ
Schwartz Bros.

FRANK ROSS
Northwestern Representative
S & M Lamp Co.

FIRE DEPARTMENT EQUIPMENT MANUFACTURERS AND REPRESENTATIVES

W. HOLMES
Secretary-Treasurer
Waterous Co.



FRANK J. WATEROUS
President
Waterous Co.

FRED A. WATEROUS
Sales Manager
Waterous Co.

ANDREW KENNEDY
Superintendent
Waterous Co.

E. D. PAKENHAM
General Manager
Roofing Distribution
Johns-Manville Corp.

J. M. BERDAN
Dept. Manager
General Building Materials
Johns-Manville Corp.

V. G. PHILLIPS
Sales Mgr.
Yellow Truck & Coach Mfg. Co.

L. P. STOREY
Engineer
Waterous Co.

R. C. IDDINGS
President
Fyr-Fyter Co.

RAY C. HAHN
General Sales Manager
Fyr-Fyter Co.

O. S. BURKE
Mgr. Siren Dept.
Federal Electric Co.

WM. T. RICHERT
Sales Manager
Everson-Ross Co.

L. G. FAIRBANKS
Mgr. Truck Tire Dept.
Firestone Tire & Rubber Co.

M. A. LAWTON
Treasurer and Gen. Mgr.
Andrew J. Morse & Son, Inc.

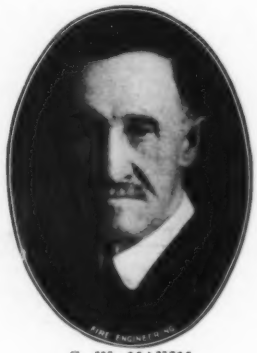
H. E. BROWNE
General Manager
John H. Clay, Inc.

R. C. ANDERSON
Vice-President
Buckeye Iron & Brass Works

FIRE DEPARTMENT EQUIPMENT MANUFACTURERS AND REPRESENTATIVES

FRED B. ALGER
Sales Manager
Maxim Motor Co.

ERNEST L. MAXIM
Treasurer
Maxim Motor Co.



C. W. MAXIM
President
Maxim Motor Co.

C. A. CAREY
Mechanical Engineer
Maxim Motor Co.

W. P. RYAN
Sales Representative
Sanford Motor Truck Co.

THOS. R. JOHNSTONE
General Repr.
Am. Magirus Fire Appliance Co.

RICHARD THOMANN
Assistant Treasurer
Am. Magirus Fire Appliance Co.

R. E. NORTHWAY
Works Manager
Maxim Motor Co.

E. H. IMPSON
Sales Representative
Sanford Motor Truck Co.

F. G. OAKLEY
Sales Mgr.
Sanford Motor Truck Co.

L. L. ROGERS
Sales Representative
Sanford Motor Truck Co.

CHAS. F. DOTY
Sales Representative
Sanford Motor Truck Co.

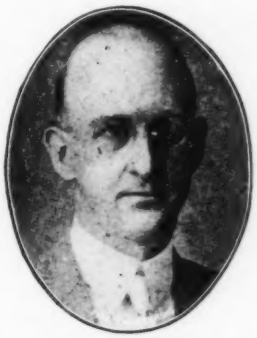
A. M. ELDER
Eastern Rep.
Stutz Fire Engine Co.

E. G. SOURBIER
President
Stutz Fire Engine Co.

F. B. McCULLOUGH
General Manager
Stutz Fire Engine Co.

R. R. MARTIN
Factory Rep
Stutz Fire Engine Co.

FIRE DEPARTMENT EQUIPMENT MANUFACTURERS AND REPRESENTATIVES



J. A. FANCHER
New York State Sales Manager
Fabric Fire Hose Co.

ROBT. MANY
New England Sales Manager
Fabric Fire Hose Co.

W. T. COLE
President
Fabric Fire Hose Co.

A. C. HOPPER
Southwestern Sales Manager
Fabric Fire Hose Co.

W. S. HARLEY
Pittsburgh Sales Manager
Fabric Fire Hose Co.

W. H. LEWIS
Boston Representative
Fabric Fire Hose Co.

H. B. SUTPHEN
Sales Manager
C. H. Sutphen & Son
Ohio Representatives
Fabric Fire Hose Co.

C. H. SUTPHEN
President
C. H. Sutphen & Son
Ohio Representatives
Fabric Fire Hose Co.

G. E. BRADBROOK
General Manager
C. G. Braxmar Company

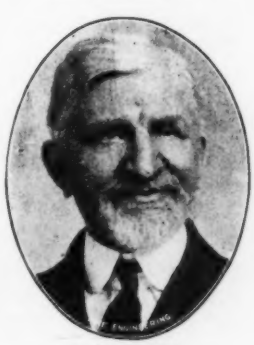
MRS. C. G. BRAXMAR
President
C. G. Braxmar Company

JOE V. ELGIN
Southern Sales Manager
Fabric Fire Hose Co.

ADOLPH DOBKE
Secy. & Mgr. N. Y. City Office
Fabric Fire Hose Co.

ALBERT E. HANSEN
President
Elkhart Brass Mfg. Co.

S. O. COOK
Secretary-Treasurer
Boyer Fire Apparatus Co.



S. B. BOYER
President and General Manager
Boyer Fire Apparatus Co.

MOIE COOK
Vice-President & Sales Manager
Boyer Fire Apparatus Co.

FIRE DEPARTMENT EQUIPMENT MANUFACTURERS AND REPRESENTATIVES

E. N. WELLS
In charge of
Kansas City Office

A. A. SCHUHLER
In charge of
St. Louis Office

M. J. McELROY
In charge of
N. Y. Office

C. C. CRAIG
In charge of
Cleveland Office

W. B. BURLEY
In charge of
Minneapolis Office

THOMAS W. NESS
Sales Manager

EDWIN R. HARDING
President

B. B. HATCH
Fire Alarm Engineer

W. L. WEBSTER
In charge of
Detroit Office

W. H. WELSH
In charge of
N. Y. State Sales

G. J. RICK
In charge of
N. E. Sales

C. H. GOGEL
In charge of
Baltimore Ter.

V. P. O'KEEFE
Fire Alarm Engineer

W. M. TIFFANY
Fire Alarm Engineer

IRVIN HICKMAN
Sales Engineer

ROBERT HALL
Sales Engineer

P. J. HERTZ
Sales Engineer

J. C. ROSE
Sales Engineer

J. F. DUROSS
Sales Engineer

A. L. VOGAN
Sales Engineer

W. M. MacCUSKER
Sales Engineer

E. S. WILKINS
Service Engineer

OFFICERS AND REPRESENTATIVES OF HOLTZER-CABOT ELECTRIC CO.

QUESTIONS AND ANSWERS

Conducted by FRED SHEPPERD, B. Sc., M. E.

"He that questioneth much shall learn much"—BACON

NOTE—Readers of FIRE ENGINEERING are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified.

Data on Upper Darby, Pa.

To the Editor:

Having read the article in this department in the issue of June 12 in answer to E. S. J. of Upper Darba, Pa., I can not refrain from replying.

First, Upper Darby has four companies working as a department—at least one of these is now using a booster tank on a Seagrave pumper and had the gentlemen in question desired information as to the comparative merits of the booster and chemical tanks, he could have secured his information from a local source and from men who have used both under local conditions.

Upper Darby has a population of 50,000 with two rapidly growing mercantile districts situated about one mile apart. One of these now has an insured value of more than $10,000,000 and the other is growing rapidly. In addition to this, we cover a large district of frame and stucco residences most of which have wood shingle roofs. Under these conditions, we believe that our chemical tanks should be separated from the other units as on numerous occasions we have used them on roof fires started from the main building involved.

We are very glad to see that your view in this matter agrees with ours, and hope that E. S. J. and his company will keep the unites separate.

Yours very truly,
THEODORE D. MITCHELL,
Asst. Chief, Upper Darby, Pa.

Fire Department Hydraulics Problems

To the Editor:

Below are two questions in hydraulics which I wish you would discuss at an early date. Several of the members of our company have worked them out but no two answers are alike.

W. T. O.

Question 1: What pressure would be required on a high pressure hydrant to give a nozzle pressure of 90 lbs. on a 1¼-inch nozzle through 18 lengths of 3-inch hose?

Question 2: With the same nozzle pressure, 60 lbs., which will deliver the most water; 2 single lines of 3-inch hose, 500 ft. long, each with 1¼-inch nozzle; or the same two lines siamesed to a deluge set with a 1¾-inch nozzle? What would be the engine or hydrant pressure in each case?

Answer 1: There are two methods of solving this problem, each of which deserves the same credit:

First Solution: E. P. = N. P. (1.1 + K x L).

Use the value of K for 3-inch hose and 1¼-inch nozzle, which is 0.092.

E. P. = 90 (1.1 — 0.092 x 18).

Where 90 is the N. P.; 0.092 is the value of K; 18 is the number of 50 ft. lengths of hose (3-in.) in the layout.

E. P. = 90 x 2.756, or 248 lbs. approximately.

Second Solution: Where the candidate does not remember the value of K for a 3-in. line with 1¼-in. tip, the layout may be reduced to 2½-in. hose having 1¼-in. tip.

The factor for reducing 3-in. hose to 2½-in. is 2.6.

900 ft. of 3-in. hose then equals $\frac{900}{2.6}$ = 346 ft. of 2½-in. hose.

The number of 50 ft. lengths in this line is $\frac{346}{50}$ = 6.92. This figure is the value of L in the formula.

The value of K for 2½-in. hose having 1¼-in. nozzle is .248.

E. P. = N. P. (1.1 + K x L)

E. P. = 90 (1.1 + 0.248 x 6.92)

E. P. = 90 x 2.81616 or 253.45 lbs. approximately.

Answer 2: There are two solutions to each part of this problem, as given:

The first method of determining the relative discharges of the two layouts is to compare the nozzle areas. The easiest way of doing this is to find a single nozzle equivalent to the 2¼-in. nozzles and compare the diameter of this nozzle with the 1¾-in. nozzle.

Method of finding combined nozzles: 1¼-in. x 1¼-in. = 1.562. 1¼ x 1¼ = 1.562. 1.562 + 1.562 = 3.124.

√3.124 = 1.765 which is the approximate diameter of a single nozzle having an area equal to the two 1¼-in. nozzles. Note that the diameter of this combined nozzle is greater than 1¾-in. nozzle, therefore the discharge from the two nozzles or their equivalent in a combined nozzle is greater than the discharge from the 1¾-in. nozzle, the discharge depending directly upon the size of the nozzle where the pressure is the same on both.

Hence the two 1¼-in. nozzles have a greater discharge than the 1¾-in. nozzle.

The second method of determining this same result is to actually calculate the discharge from all three nozzles and compare the combined discharge from the two 1¼-in. nozzles with that from the 1¾-in. nozzle.

Discharge from the 1¼-in. nozzle = 30 x 1¼ x 1¼ x √60 where 1¼ is the nozzle diameter and 60 the nozzle pressure. 30 is a factor which enters into this formula (and is not barometric pressure). The value 29.7 if used in place of 30 gives a little more accurate results but as the 30 receives full credit in Civil Service it is here used as being the simpler.

Discharge from 1¼-in. nozzle = 30 x 1.562 x 7.74 (where 7.74 is the square root of 60).

= 362.7 G. P. M.

The discharge of these two nozles at the same time, pressure would be twice as much or 725.4 G. P. M.

Now to calculate the discharge from the 1¾-in. nozzle at 60 lbs. pressure.

Discharge = 30 x 1¾ x 1¾ x √60

= 30 x 1.75 x 1.75 x 7.74 = 711 G. P. M.

Notice that the combined discharge from the two 1¼-in. nozzles is, as shown in the first solution, greater than the discharge from the 1¾-in. nozzle.

The two methods of solving the first layout in the second part of the problem is as follows:

We have two parallel 500-ft. lines of 3-in. hose each equipped with a 1¼-in. nozzle. The engine pressure on either line will be the same so that it is only necessary to find the engine pressure on one line and this is the engine pressure for both.

Employing the value of K for 3-in. hose having 1¼-in. nozzle we get E. P. = N. P. (1.1 + KL)

= 60 (1.1 + 0.092 x 10)

= 60 x 2.02 = 121.2 lbs.

The second method of solving this first layout follows:

Reduce the 3-in. hose to 2½-in. hose by dividing the factor 2.6 giving 192 ft. of 2½-in. hose.

Solve for the E. P. with this stretch of 192 ft. of 2½ in. hose equipped with 1¼-in. nozzle.

E. P. = 60 (1.1 + 0.248 x 3.84)

Where 0.248 is the value of K for 2½-in. hose and 1¼-in. nozzle; and 3.84 is the number of 50 foot lengths in the line.

E. P. = 60 x 2.05232 or 123.14 lbs. E. P. approximately.

The two solutions to the second part of the problem are as follows: First solution: Using the value of K in the formula for two parallel lines of 3-in. hose siamesed into a deluge set having 1¾-in. tip. This value of K is 4.093.

E. P. = N. P. (1.1 + K. x L.)

N. P. is 60 lbs.

K, as noted above, is 0.093.

L, which is the number of 50 ft. lengths of hose in the line, is 10.

E. P. = 60 (1.1 + 0.093 x 10)

= 60 x 2.03 = 121.8 lbs.

The second method of solving this part of the problem is by reducing the 3-in. line of 2½-in. hose as follows:

500 ft. of 3-in. hose = $\frac{500}{2.6}$ = 192 ft. of 2½-in. hose.

Two parallel lines of 2½-in. hose each 192 feet long may be combined to form a single line of hose by dividing by the factor 3.6.

$\frac{192}{3.6}$ = 53.3 ft. of 2½-in. hose. This is the length of 2½-in.

hose equivalent to the two parallel lines of 3-in. hose each 500 ft. long.

Now the layout may be considered as a stretch of 53.3 ft. of 2½-in. hose having a 1¼-in. nozzle and 60 pounds pressure.

E. P. = 60 x (1.1 + KL)
= 60 x (1.1 + 0.907 x 1.066)

(Where 0.907 is the value of K for 2½-in. hose with 1¼-in. tip and 1.066 is the number of 50 ft. lengths of hose in the line).
E. P. = 60 x 2.06686 = 124 lbs.

Two Problems Alike—But With Different Nozzles

To the Editor:

An engine is pumping through 900 feet of 2½-inch hose to a siamese (Y) connection from which two 100-foot lines of 2½-inch are stretched to 1⅛-inch nozzles. Engine pressure is 200 lbs. What is the pressure at each nozzle and what is the pressure at the Y connection?

Sincerely yours,
J. K. J.,
Boston, Mass.

Answer: The first step in this solution is to reduce the two 100-foot lines of 2½-inch hose to a single line of 2½-inch hose. This is done by dividing 100 by 3.6, the factor for changing parallel lines of 2½-inch hose to a single line.

100 divided by 3.6 gives 27.8 feet of 2½-inch hose.

The next step is to combine the two nozzles. This is done by taking the square of each nozzle, adding the squares so found and then taking the square root. The figure secured will be the diameter of the nozzle equivalent to these two 1⅛-inch nozzles. Then find the nearest standard size nozzle to the combined nozzle diameter.

1⅛ × 1⅛ is approximately 1.26.

The same figure applies for the second nozzle.

1.26 + 1.26 = 2.52

The √2.52 = 1.58

The nearest standard size nozzle to 1.58 is the 1⅝ inch nozzle, which has a diameter, in decimal form, of 1.625.

Now the layout may be considered as being composed of a single stretch of 2½ inch hose 900 + 27.8 or 927.8 feet in length.

The nozzle diameter is 1⅝ inches.

Employing the Underwriters' formula for the nozzle pressure we have:

N. P. = E. P. ÷ (1.1 + K × L)

K for 1⅝ inch nozzle and 2½ inch hose is .680.

L is the number of 50 foot lengths of hose in the 927.8 feet stretch or 18.556.

Then N. P. = 200 ÷ (1.1 + .680 × 18.556)
= 200 ÷ (1.1 + 12.63)
= 200 ÷ 13.73 = 14.57 approximately.

This is the nozzle pressure.

The next stop is to determine the flow from the 1⅝ inch nozzle. The formula used may be either 29.7 × D × D × √P or 30 × D × D × √P.

The former figure is a little more accurate and is used in this case although full credit would be given for the use of 30.

Discharge in gallons per minute = 29.7 × 1⅝ × 1⅝ × √14.57
= 29.7 × 1.625 × 1.625 × 3.81
= 299 g. p. m. or 300 gal. approximately.

Assuming this flow to be the same as that from the two single 1⅛ inch nozzles, the flow from each nozzle would be one-half of 300 gal. per minute or 150 g. p. m.

To find the pressure at the Y-connection, find the friction loss in either of the branch lines and add this friction loss to the nozle pressure, the pressure at the Y connection being the result.

Friction loss is found by the formula:

Friction (100 ft. 2½ inch hose) = 2 × Q × Q + Q where Q is the flow in hundreds of gallons per minute.

In this case the flow from each nozzle is 150 gallons. Therefore Q will be 1.5.

Then the friction loss per 100 feet of 2½ inch hose = 2 × 1.5 × 1.5 + 1.5 or 6 pounds.

As each branch is 100 feet in length, the total friction loss will be 6 pounds in either.

The pressure at the Y connection is then nozzle pressure plus 6 pounds or 14.57 + 6 or 20.57 pounds.

To the Editor:

Will you kindly work out the following example and greatly oblige. An engine is pumping through 900 feet of 2½ inch hose, which branches into 2 lines each 100 feet long. Engine pressure is 200 pounds. Nozzles are 1¼ inch in diameter. What is the pressure at the Y.

Cordially yours,
F. R. W.

Answer: Probably the simplest method of working this problem out is to first reduce the layout to the equivalent of a single line of 2½ inch hose. This is done by reducing the branch lines into a single line and combining the two 1¼-inch nozzles into a single nozzle.

To reduce the two parallel 100 foot lines of 2½ inch hose to a single line we divide by 3.6, which is the factor for reducing parallel lines to a single line. 100 divided by 3.6 equals 27.8 feet of 2½ inch hose.

To this we add the 900 feet of 2½ inch hose in the main line giving us a layout equivalent of 927.8 feet of 2½ inch hose.

The next step is to combine the two 1¼-inch nozzles. This is done by taking the square of each, adding these squares and taking the square-root of the sum so found. This gives us a nozzle of approximately 1¾ inch in diameter.

Then employ the Underwriter's formula for finding the nozzle pressure on this combined nozzle. K equals .907 for 2½ inch hose with 1¾ inch nozzle. L, which is number of 50 ft. lengths in the line, is equal to 927.8 divided by 50 or 18.55.

Nozzle pressure equals Engine Pressure divided by (1.1 plus K × L)

Nozzle pressure equals 200 divided by 17.9 equals 11.16 pounds. This is the pressure at the combined nozzle, but the same pressure will be found at each of the two 1¼-inch nozzles.

Find the discharge from either of these 1¼ inch nozzles. The formula used is: Discharge equals 30 × d × d × square-root of pressure.

The pressure being 11.16 pounds, the square-root is 3.38 pounds. Then the discharge equals 30 × 1¼ × 1¼ × 3.38 or approximately 158 gals. per minute.

The friction loss in 100 feet of 2½ inch hose carrying 158 gals. per minute is found by the formula: friction = 2 × Q × Q + Q. In the above formula, Q is the number of hundreds of gallons flowing from the nozzle.

The friction equals 2 × 1.58 × 1.58 plus 1.58 or 6.58 pounds. The siamese pressure must equal the nozzle pressure plus what is lost in friction between the siamese and the nozzle.

Thus the siamese (or Y) pressure will be 11.16 plus 6.58 or 17.74, or 17¾ pounds.

Salvage Corps and Duties of Instructors

To the Editor:

Would you please outline to me the duties of a salvage corps; also the duties of an instructor in charge of a drill tower.

Sincerely yours,
K. C., Columbus, O.

Answer: The duties of a salvage corps include the saving of property at fire. This may take the form of covering over materials with waterproof covers where such materials are in danger of being damaged by water; removing valuable stock to a point of safety; overhauling to save property from water damage; temporary repairing of roofs to prevent water damage to stock from rain; and in general, all operation which would tend to prevent unnecessary damage to property either from fire or water.

The instructor in charge of a drill tower must, first of all, see that his men are protected against accident.

His duties include the training of the men in the evolutions required by the particular fire department in which he is a member. He is to instruct the men in the proper use of ladders, scaling ladders, life lines, life nets, life gun, and in general the duties incidental to the work of truckmen. In addition to this he must include the work of hosemen in buildings such as hoisting hose, stretching hose up ladders and stairways, employing nozzles and other fire fighting equipment.

Forest Fires Menace Cape Cod, Mass.—Fire which started in an area of three square miles of timber land near Plymouth Mass., raged northward and threatened the Cape Cod section of the state.

Madison, Wis., Asks for More Apparatus—Chief Charles W. Heyl has asked that the council of Madison, Wis., purchase another Seagrave pumper to go with the one that is now being used in the central fire station.

Six-County Fire Official Presented with Gift—P. J. Brennan of Shenandoah, Pa., retiring president of the Six County Firemen's Association was presented with a leather bag and Mrs. Brennan with a gold necklace from the Women's Auxiliary.

Salt Lake City Adds Fire Alarm Boxes—Twenty new fire alarm boxes have been added to the fire alarm system of Salt Lake City, Utah. The work is being done under the supervision of Charles J. Reading, superintendent of the fire alarm system.

What Will You Have?

The International Truck line is so complete that its various chassis meet the needs of every department of fire protection service.

The "Special Delivery," which is being used successfully by the telegraph and control division of the New York City Fire Department, is ideal for light, fast, emergency and supply service.

The Speed Trucks, ranging from 1¼ to 2-ton capacities and with wheelbase lengths of from 117 inches up to 164 inches (according to model selected), are especially suitable for mounting chemical units, medium-capacity pumpers, and hook and ladder equipment. The 117-inch SD has been used in several instances as a tractor truck in converting old horse-drawn equipment. All sizes of Speed Trucks are built with 4 and 6-cylinder engines, affording a range of power to meet special local requirements.

For heavier work, there are International Heavy-Duty Trucks, in chain-drive and double-reduction-gear drive types, for rated capacities up to 5 tons. These are sturdy, long-lived trucks capable of doing the heaviest kind of work at low cost.

For more specific information, get in touch with the nearest sales and service branch—there are 136 in the United States—and inquire concerning the chassis that best fits your service.

INTERNATIONAL HARVESTER COMPANY
of America
(Incorporated)

606 So. Michigan Ave. **Chicago, Ill.**

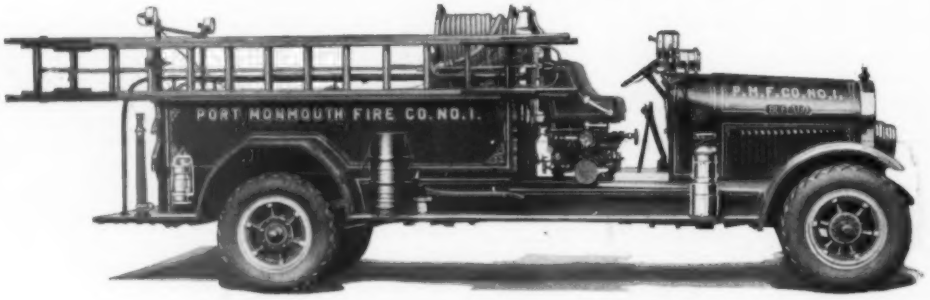
INTERNATIONAL

HARVESTER

TRUCKS

COMPANY

Buffalo Type 50



Speaks For Itself In

Construction — Service — Power

Write for Detailed Specifications

BUFFALO FIRE APPLIANCE CORP.

44 Central Ave., Buffalo, N. Y.

A Nation-Wide Service for Better Protection Against Fire Loss and Water Damage

PROTECTION A.D.T. SERVICES

The remarkably efficient A. D. T. System of Central Station Night Watch and Fire Alarm Service has played a large part in helping to cut down the fire loss of the country; and the A. D. T. System of Sprinkler Supervisory Service has been instrumental in saving millions of dollars in water damage.

An Invaluable Service

It is generally known that water damage in sprinklered premises is considerably greater than fire damage, and it is a fact that in a great majority of sprinklered equipments no one on the premises knows how to shut off the water. Hence, the great importance and value of our Supervisory Service in not only recording water flows, but immediately sending representatives who know how to stop them.

Over $20,000,000,000

worth of property throughout the country is protected by A. D. T. services, and fire officials in cities everywhere are finding A. D. T. cooperation an invaluable aid in their work.

Send for Complete Information!
Controlled Companies

American District Telegraph Co.
Executive Offices, 183 Varick St.
New York City

BADGES

of Every Description

QUALITY GUARANTEED

Right Prices
Prompt Delivery

WE MAKE THE DURABLE

"ROSS" HELMET

OUR LATEST CATALOGUE AND PRICE LIST WILL GLADLY BE SENT ON REQUEST.

EVERSON-ROSS CO.
88 Chambers St., New York

Another Newly Developed Foam System

Employs Two Ejectors and Uses Two Powders—Two Solutions so Formed Meet at Desired Point to Produce Foam

AFTER many months of experimental work the National Fire Protection Company of Philadelphia, Pennsylvnia, have developed and placed on the market a new foam generating system. Before starting with the development of their chemical ejectors, the company first investigated the question of foam and have been able to produce a very satisfactory product both from the standpoints of expansion and consistency, and almost a pure white in color.

After having settled the foam question attention was turned toward developing the mixing apparatus, Bearing in mind that for years the chemicals used in foam systems have been dissolved before bringing together for mixing, in hand foam extinguishers, hand foam engine, and in stationary foam systems, the company worked along this line to produce apparatus which would give the benefits of the old system together with the facility of the foam "generator" idea.

Feeling that the chemical when stored in a dry-mixed condition deteriorated, due to the fact that it required only moisture to produce reaction, every effort was made toward perfecting a system whereby chemicals could be kept separate until they are brought into solution and just prior to the time when the two solutions are brought together to produce foam. Hence the company divided the single stream into streams—each independent and each flowing through a separate ejector of special design. These ejectors may, if desired, be permanently attached to each other, or they may be separated as much as desired. Into one ejector is introduced in powder form chemical "A" and into the other, chemical "B". Each goes into solution with the water, but no chemical reaction takes place. These chemical streams "A" and "B" may be run independently through any length of hose desired. Then by joining the lines in a standpipe, deluge set, or another length of fire hose foam is obtained at the point of mixing. In speaking of their system the company representative says: "To begin with out 'A' and 'B' chemicals are stored and used separately. They will last as long as the strong cans that contain them. There is no need to add an inert substance to keep them from deteriorating, which does not form foam. Being introduced separately the water has a chance to thoroughly dissolve the chemicals before any chemical action takes place.

"In the National Foam System the foam is not generated at the machine, but at a point determined by the operator. The distance from the fire is not predetermined by the distance foam will travel through hose or pipe before breaking down."

In order to determine the capabilities of the National method of lifting foam, the Atlantic Refining Company at Philadelphia conducted extensive tests and from which the following data is taken:

Tests by Atlantic Refining Company

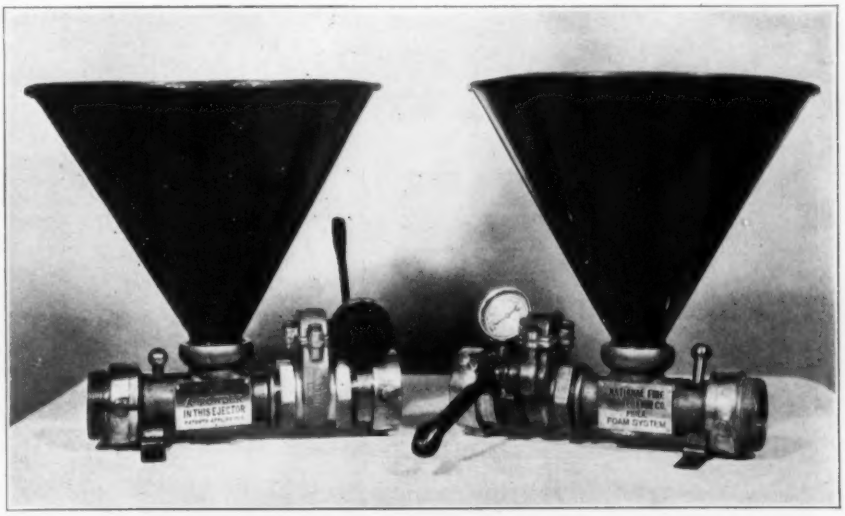
Tanks diameter 100 feet.

Area to be covered 7,854 square feet.

Foam required to cover area 6 in. thick 3,927 cu. feet.

Apparatus Used in Test

A 30′ dia. hole was provided in ground about 3 ft. deep and a 5′ steel tank ring 30′ in dia. was installed therein. One side of this ring was built up, forming a tank shell about 24 ft. high. A 6″ riser was installed from ground up to the side of the tank and an A. R. Co. distributing chamber was installed at the top so that foam was directed at inside shell of tank, falling along same until liquid level in tank was reached. Two (2) 2½″ pipe lines each 60 ft. long were attached to a common connection at bottom of the riser, entering same at right angles to each other. Fifty (50) ft. of 2½″ hose was connected to the ends of each of the 2½″ pipes and run to the outlet end of the Ejector. Two (2) separate lengths (50′) of 2½″ hose led from the Ejector inlet to a fire hydrant. A separate meter to measure the water was installed on the inlet side of the Ejector. The tank was filled with 17″ of water and 1200 gals. of oil poured on same, making approximately 3½″ of oil, consisting of 850 gals. of fuel oil, 250 gals. of Cross Gas Naptha, and 100 gals of Gasoline.



National Chemical Ejectors (Pair)

Each Ejector is separate and complete in itself, with hopper, water pressure gauge, quick operating water valve, chemical control and back pressure check. Each Ejector weighs 25¾ lbs., without hopper.

Procedure

The oil was ignited and left burning approximately 45 seconds at which time the entire tank was enveloped,

and the fire had reached its fullest possible height. The foam was then started, the powders being poured by hand from cans, each can containing about 30 lbs. of powder. Water was played on shell of tank, adjacent to riser to keep shell cool.

Time Consumed

Thirty (30) seconds were required for foam to reach tank after water was turned on. Fire was completely out in 2¼ minutes after foam began pouring down shell of tank, making a total time of 2¾ minutes from time the water and chemicals were started.

Quantity of Powder Used

250 lbs. of "A" Chemical.
250 lbs. of "B" Chemical.

Foam Produced (Effective)

Foam averaged 2" thick over tank area or approximately 118 cu. ft.

Summary of Results Obtained

Total quantity of combined powders used—500 lbs. or 9 cu. ft.

Total quantity of water used—310 gals. or 41.4 cu. ft.

Effective Foam produced—118 cu. ft.

Ratio of Expansion—(Effective Foam produced to Liquid Chemicals) 2.4 to 1.

Ratio of Expansion—(Effective Foam produced to Total Powders Used) 13 to 1.

1 lb. of combined powders produced .236 cu. ft. of effective foam.

1 cu. ft .of combined powders produced 13 cu. ft. of effective foam.

1.61 lbs. of combined powders used per gal. of water.

Time required to produce 118 cu. ft. of effective foam—2¾ minutes or 165 seconds.

Foam produced per second, .71 cu. ft.

Velocity of liquid chemicals thru 2½" lines, 5 ft. per second. (Approximately.)

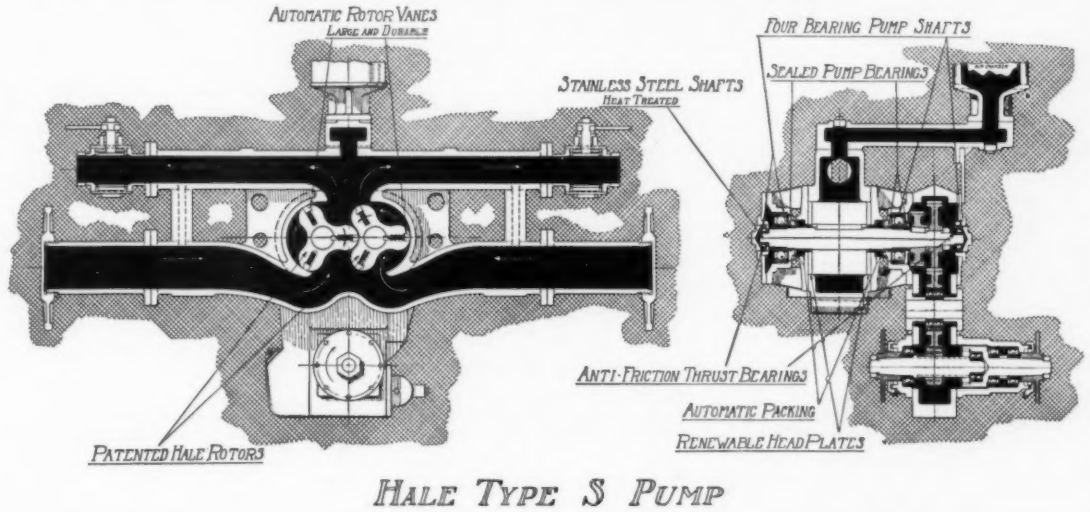
The National Chemical Ejector weighs 25¾ pounds and has an overall length of 13½ inches. The gauge is on the intake side of the quick operating valve, enabling the operator to read the water pressure whether or not the valve is open. Density of the foam can be controlled by the operation of the water valve, and the flow of the chemical is governed by a small handle on the top of the ejector.

Tenth Term for Milford, Conn., Fire Official—The re-election of William M. O'Hara as president of the Milford, Conn., Board of Fire Commissioners, brings the tenth term to this official. President O'Hara has served continuously since the Fire Board was established at Milford in 1917.

Chief Heitman Receives Raise in Salary—Through an act of the 1927 Connecticut State Legislature which took effect on July 1, the salary of Chief Henry H. Heitman of the Waterbury, Connecticut, fire department is increased to $6,000 per annum. This raise in salary for the head of the Waterbury fire department, gives Chief Heitman the honor of being the second highest paid fire official in the New England states, the salary of Chief Daniel F. Sennott of Boston being the only one larger than that of Chief Heitman.

Above, Close-up View of Foam Traveling Down Tank Wall and Spreading Rapidly over Surface of Tank. Upper, Right, Fire a Few Seconds After Start but Before Reaching Its Greatest Height. Lower, Right, A Few Seconds After Foam had Reached Burning Surface. Note Rapid Effect of Foam Blanket in Reducing Blaze. Foam Ribbon May be Seen Near Mixing Head.

A NEW STANDARD



HALE TYPE S PUMP

Patent Pending

The Hale "Dreadnaught" Model Rotary Fire Pump has set a new standard of performance in fire fighting

Install a "Hale" in your department and enjoy:

Extremely high efficiency.

Longer effective life.

Greater freedom from trouble.

HALE FIRE PUMP CO., INC.

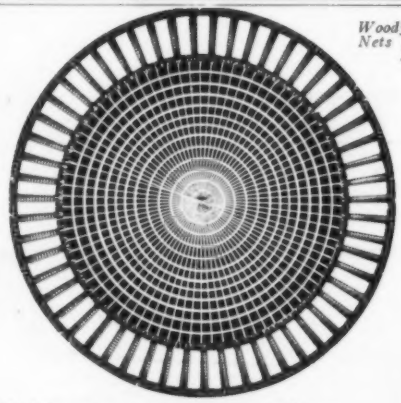
Conshohocken, Penna.

Everything

for the

Fire Department

Search Light Dry Cell Storage Calsium Carbide



Woody Rope Life Nets over 400 in Service

Turret Nozzles Arc Styles

When in need of new equipment of any kind, be sure to get complete information from us before placing your order. You will get what you want, the price will be right, delivery will be prompt and you'll be satisfied in every way.

Motor Apparatus	Fire Hose	Gas Masks
Extinguishers	Ladders	Life Nets
Chemical Engines	Searchlights	Nozzles
Brass Goods	Fire Brooms	Sirens
Reels & Racks	Hose Carts	Badges

Don't hesitate to write us about your equipment. We are fire protection engineers as well as manufacturers.

Send for Complete Catalog

The Woodhouse Manufacturing Company, Inc.

D. A. Woodhouse, Pres. Geo. J. Kuss, V. Pres.

156 Chambers St., New York City

ALUMINUM BOXES

can't rust or corrode; sturdy; light weight. H-S sixteen round, succession, non-interfering type, precision operating fire alarm boxes have the confidence of the country's largest municipalities. Designed, built and installed by specialists. Write for descriptive bulletins.

HARRINGTON-SEABERG CORPORATION

DEPT. G, MOLINE, ILLINOIS

Manufacturers

The only manufacturers filling all the signal requirements of the modern municipality. Fire Alarm Police & Traffic Signal Equipment.

Macgregor Hose Conqueror

Now in Service in Many Departments

Makes Dangerous Work Safe!

Fo 1⅛, 1¼, 1½

streams using one or two lines

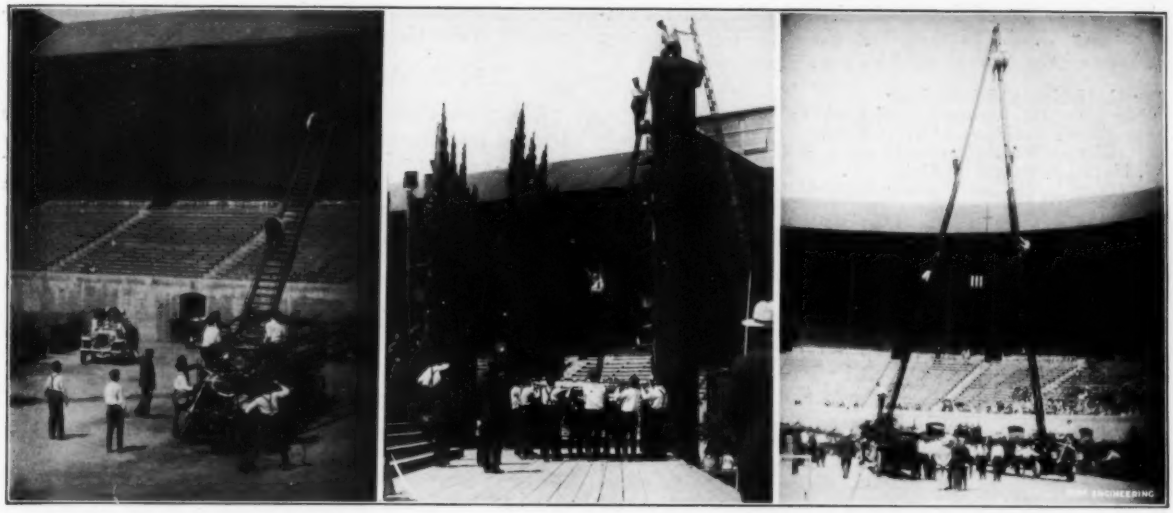
For larger streams using three or more lines use the MACGREGOR PORTABLE MONITOR AND SAFETY STAND.

"Puts the water where you need it"

One Man Does the Work of Five Men

Wallace Macgregor, *Manufacturer*

1962 Yosemite Road, Berkeley, California



Left, Ascending 85-Foot Aerial Ladder, While It Is Being Raised. Center, 40-Foot Jump Into Life Net. Right, Drill With 85-Foot Aerial. Man in Center, at Top, Preparing to Descend on Life Line

The Portland Fire Bureau

(*Continued from page 762*)

Straight Chemical	2
85′ Aerial Truck	3
City Service Truck	3
3-Ton Supply Truck	1
1-Ton Hydrant Truck	1
Fire Alarm & Police Telegraph Truck	1
Roadster	1
5 Passenger Touring	9
7 Passenger Touring	2
Emergency Steamers	14
Hose, all sizes, No. feet	100750
Hydrants	6049
Cisterns	79
Fire Alarm Boxes	546
Auxiliary Volunteer Fire Companies reels	5
Village Trucks	2
Forty-gallon Chemical	1

Location of Fire Houses

The location of houses occupied as fire stations are as follows:

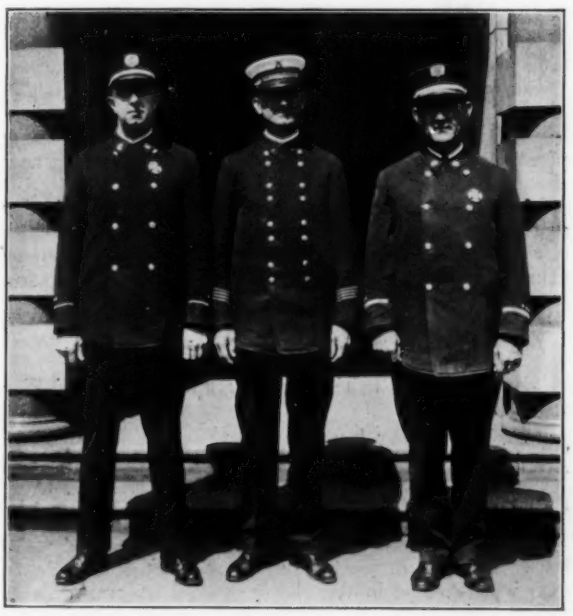
Fire Boat No. 1, George H. Williams	Ft. of Albina Ave.
Fire Boat No. 2, David Campbell	201–3 Fourth St.
Engine Co. No. 1	126 N. Third St.
Engine Co. No. 2	511 Glisan St.
Engine Co. No. 3	370 Fourth St.
Engine Co. No. 4	811 Front St.
Engine Co. No. 5	23rd & Reed Sts.
Engine Co. No. 6	40 E. Third St.
Engine Co. No. 7	303 Russell St.
Engine Co. No. 8	162 E. 35th St.
Engine Co. No. 9	1344 Kelley St.
Engine Co. No. 10	63 E. 28th St. N.
Engine Co. No. 12	261 Grand Ave. N.
Engine Co. No. 13	1027 Union Ave. N.
Engine Co. No. 14	590 Spring St.
Engine Co. No. 15	494 Montgomery St.
Engine Co. No. 16	188 N. 24th St.
Engine Co. No. 17	448 E. 24th St. N.
Engine Co. No. 18	1597 E. Stark St.
Engine Co. No. 19	1660 E. 13th St.
Engine Co. No. 20	69 Second St.
Engine Co. No. 21	273 First St.
Engine Co. No. 22	367 E. Seventh St.
Engine Co. No. 23	1126 Patton Ave.
Engine Co. No. 24	1000 Francis Ave.
Engine Co. No. 25	329 N. 20th St.
Engine Co. No. 26	30 E. 82nd St. N.
Engine Co. No. 27	1494 Sandy Blvd.
Engine Co. No. 28	426 Durham Ave.
Engine Co. No. 29	1711 Brandon St.
Engine Co. No. 30	4536–67th St. S. E.
Engine Co. No. 31	215 Philadelphia St.
Engine Co. No. 32	1st & "D" Sts., Linnton
Engine Co. No. 33	201–3 Fourth St.
Truck Co. No. 1	370 Fourth St.
Truck Co. No. 2	511 Glisan St.
Truck Co. No. 3	40 E. Third St.
Truck Co. No. 4	303 Russell St.
Truck Co. No. 5	69 Second St.
Chemical Co. No. 1	

AUXILIARY FIRE STATIONS

Engine Co. No. 33 (old)	859 Mississippi Ave.
Supply House	227 Union Ave. N.

Executive Officers of Bureau of Fire

The Portland Fire Department comes under the direction of the City Council and under the supervision of



Captain A. L. Sherk, Battalion Chief Harry Johnson, and Captain Bert Faber, Committee on Hotels

the Department of Public Affairs of which City Commissioner C. A. Bigelow has charge. The executive officers of the Bureau of Fire are:

Lee G. Holden, Chief Engineer
Edward Grenfell, 1st Ass't Chief Engineer
Jas. Dillane, 2nd Ass't Chief Engineer
(District No. 2—West side, north of Morrison Street)
W. D. Heath, Battalion Chief
(District No. 1—West side, south of Morrison Street)
Harry C. Johnson, Battalion Chief,
(District No. 4—East side, south of E. Ankeny Street)
Fred W. Roberts, Battalion Chief
(District No. 3—East side, north of E. Ankeny Street)
H. F. Bahlman, Chief Clerk
Chas. A. Savariau, Superintendent Fire Alarm Telegraph
W. J. Phillips, Master Mechanic

Great Growth of Bureau

The fire department has grown from an organization of twelve companies in 1904 until it has reached a total

Left to Right: Fire Marshal Edward Grenfell, Chairman Banquet Committee; City Commissioner C. A. Bigelow; Ira F. Powers, Chairman Finance Committee; Judge Jacob Kanzler, General Chairman Combined Convention Executive Committee

of 43 companies at the present time and provision has been made for the expenditure of $735,000 for new fire stations and equipment to be installed the first of the year which will include three new fireboats, one new squad company, one new aerial truck and five new pumpers as well as 500 new fire alarm boxes and a new central fire alarm telegraph station.

The various fire companies are commanded by junior and senior captains under the two-platoon system. The city is divided into four battalion districts each under command of a district or battalion chief, the battalion chiefs not working under the two platoon system.

Salaries of Officers and Men

The salaries paid the members of the Bureau of Fire are as follows:

	per. mo.		per mo.
Chief	$400.00	Sr. Capt.	220.00
Asst. Chief	312.00	Jr. Capt.	208.00
2nd Asst. Chief	275.00	Hosemen	186.00
Battalion Chiefs	250.00		

The entire fire department is up on its toes and waiting the arrival of the various conventions of fire chiefs who will convene in the city August 4 to 12 inclusive. Every member of the Bureau of Fire has some particular assignment in regard to the coming conventions and it is certain they will do everything in their power in order to make the combined conventions the most successful in the history of its organization.

The Portland Fire Prevention Division

The Fire Prevention Division of the Portland Fire Bureau was created by an ordinance passed by the city council. The ordinance provides that the commissioner in charge of the Bureau of Fire shall appoint from among the members of the bureau, a qualified member who shall act as fire marshal, acting under the chief of the department.

The fire marshal has the authority to appoint from members of the Bureau of Fire, as many assistant fire marshals as he sees fit, in order to carry on the work of preventing fire, and to enforce the fire code.

The present fire code, as amended, was passed by the city council in June, 1925. It is the duty of the fire marshal and his assistants to enforce this code.

Edward Grenfell, who is the first assistant chief of the fire department, was appointed fire marshal 10 years ago, and has held that post ever since. Under his leadership fire prevention has made splendid progress in the city; and the Portland Fire Department has been awarded numerous prizes, including the Thomas Ince Cup; State Fire Marshals Flag, and the Inter-Chamber Fire Waste Contest Committee Plaque of the National Chamber of Commerce for cities of the first class.

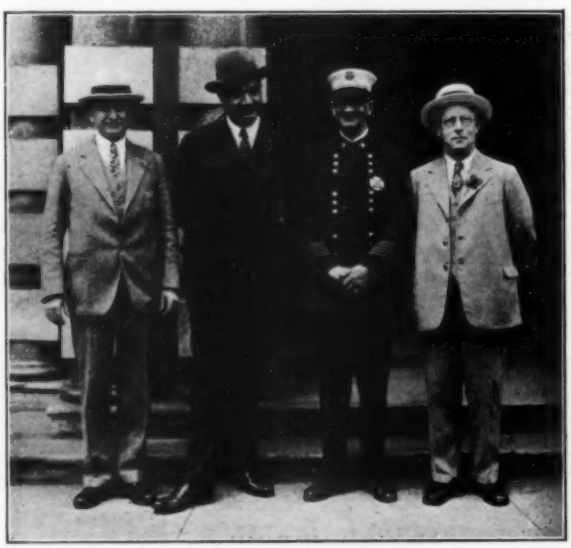
Duties of Fire Marshal

It is the duty of the fire marshal to supervise the inspection work of the division, and the investigation of the cause of fires that occur. Also to prosecute arson cases.

It is his duty also to approve new building construction insofar as the safety of life and property are concerned. He must also supervise the installation of fire protection on construction in the dock zone, and must supervise the installation of oil storage plants, and systems.

Duties of Men of Division

Under the fire marshal, in the Fire Prevention Division are 23 men whose duties are as follows:



The Executive Heads of the Local Combined Fire Chiefs' Convention Committees: Judge Kanzler, Mayor Baker, Chief Holden, and Mr. Bigelow

This light *will not* cause an explosion

WHAT causes explosions at an ordinary fire?

An ordinary fire, where the fire is burning with an insufficient supply of oxygen, generates an explosive gas — carbon monoxide. When you open up the building and enter, you let in oxygen. This oxygen mixes with the carbon monoxide. It makes what is called an explosive mixture.

You are carrying a hand lantern of the open-flame type. The open flame ignites the explosive mixture. Z-Z-Z-Z! Bang! And the damage is done. The newspapers say "the work of the firemen was hampered by back drafts."

Your work *and your safety* were really hampered by the use of a hand lantern!

You need an Eveready 2-cell focusing Flashlight No. 2671. It can be slipped into the pocket or snapped on your life belt when not in use. Notice the convenient ring-hanger. It throws a powerful, penetrating beam 200 feet. Strongly built, it withstands hard usage. Safety lock prevents accidental lighting.

Every store carries Eveready Flashlights. Ask for Eveready Flashlight No. 2671. Price $1.50, complete with batteries.

NATIONAL CARBON CO., INC.
New York UCC San Francisco
Unit of Union Carbide and Carbon Corporation

Ideal for officers. Throws a beam 1000 feet. Ask for Eveready 5-cell focusing Flashlight No. 2645. Price $5.75, complete with batteries.

EVEREADY FLASHLIGHTS & BATTERIES
-they last longer

JOHN H. CLAY, INC.

1318-20 Ridge Ave. Philadelphia, Pa.

The old reliable Fire Department Supply house you can always depend on

Manufacturer of Fire Department Supplies, all kinds of special brass connections for engines and fire plugs. Clay's Patented Finger Grip snap couplings for fire hose. Nothing like them on the market.

Siamese connections.
Fire Bells 8 to 16 inches.
Extinguishers.
Strainers, Sliding Poles, and Canopies.
Suction Couplings.
Nozzles of all kinds.
Pneumatic Landing Pads.

Door Springs

Complete Automatic spring outfits for doors opening IN and OUT, as used all over the world. Once on the doors, your door opening troubles cease. They last a life time.

Send for complete information
Be sure to specify "Clay's" Goods

"Warm as Toast" in a BODYGUARD

No longer do you need to dread that Midnight call in Zero weather. Just slip into a "Bodyguard" and let the cold wind howl.

Lined throughout with rubberized silk—weighs no more than ordinary clothing. Worn coast to coast by thousands of fire fighters. It protects you from all weather. Sold on easy terms.

Send for Big Free Catalog today.

BODYGUARD MANUFACTURING CO.
ST. JOSEPH, MISSOURI

We'll send bill

Pay within 90 days

We'll hold the dog

Name .....
Position .....
Address .....
.....

while you run get your pen and sign on the dotted line. You'll thank us for letting you subscribe!

26 issues (a full year) for $3.00

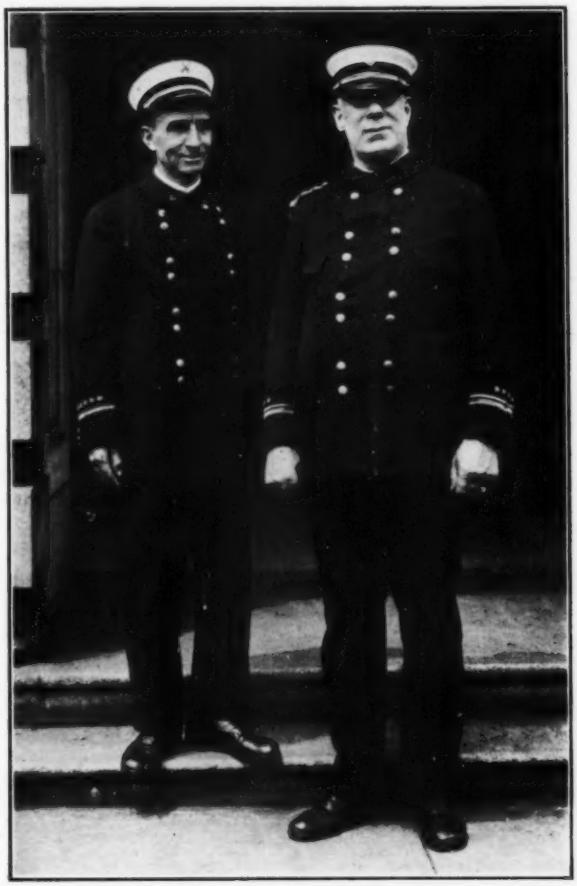
FIRE ENGINEERING,
225 West 34th St., New York, N. Y.

A secretary, whose duty is to keep all the records of the Bureau, who has charge of the files, and who must meet the public and inform them of the requirements of the Fire Ordinances, etc. He must also receive all complaints investigated, assign them to the inspectors, and act as secretary for the Bureau.

A chief inspector, whose duty is to supervise the work of inspection, prosecute court cases for ordinance violations, and take charge of the condemnation and wrecking of old buildings that become fire hazards.

The Arson Squad

The arson squad consists of four men, a chief investigator and three assistants. These men work two on a



Battalion Chief Fred. W. Roberts and Fire Alarm Superintendent C. A. Savariau, Committee on Arrangements for the Famous Mt. Hood Loop Trip, and Columbia River Highway Trip

shift of 24 hours and answer all alarms that occur in the city, along with the apparatus.

It is their duty to determine the cause of the fire, and in case of incendiarism to ascertain the person responsible and prosecute the case in court.

One man is detailed to the inspection of sawmills and other large industrial plants, and devotes his entire time to this work. It is his duty to organize fire squads and to supervise the installation of fire protection and fire prevention appliances.

One man is detailed to the inspection of theatres, and devotes his entire time to this work. He has charge of all theatres and film exchanges and arranges for the detail of firemen for large gatherings, etc.

One man is assigned as clerk and stenographer in the office.

The work of inspection is carried on by the company officers, who inspect in their own districts. Thirteen men are assigned to the fire prevention division, and these men are sent to the various companies to relieve the officers who are on inspection detail, so as to keep the companies up to full strength at all times.

Inspectors are provided with inspection blanks, and note on them the conditions found at each place they inspect. In case of violations, or fire hazards, the inspector must cause the abatement of the complaint. Particularly difficult cases are reported to the chief inspector, who assists the officer in abating the complaint.

The division is continually carrying on the work of educating the public in the line of fire prevention. Speakers are sent to the schools and all public gatherings and the bureau is continually striving to show the people the wisdom of practicing fire prevention.

Massachusetts Firemen to Give Exhibition

A fireworks spectacle entitled "Fighting the Flames" will be given on the evening of August 4 at Salem Willows under the auspices of the Massachusetts State Firemen's Association.

The committee in charge of the arrangements is composed of Chief William H. Mahoney, of Peabody; Capt. John H. Day, of Lynn; Michael J. McGonagle, of Boston, and Daniel J. Looney, secretary of the firemen's association.

The display will be elaborate and unusual, with many set pieces of unique design. The exhibition will start at 8 o'clock. The proceeds from the nominal entrance fee charged for admission will be devoted to the widows' and orphans' fund of the state firemen's relief association.

H. BELKNAP.

This Is a Combined Railroad Car, Automobile and Fire Engine

It is intended to fight forest fires, and can be transformed from a railroad car to an automobile in fifteen minutes. The apparatus was built for the Washington Forest Fire Association, and it is intended to lessen the fires in the dense forest lands of that state. It can attain a speed of fifty miles an hour and is equipped with five pumps and 4,000 feet of hose.

WHAT ARE SALVAGE VALUES OF MERCHANDISE AFTER FIRE?

Report Prepared on the Value of Various Types of Material After They Have Been Damaged by Smoke and Water

THIS concludes the report of the Committee on Salvage Operation presented before the convention of the National Fire Protection Association, and continued from the June 29 issue of FIRE ENGINEERING, *page 656:*

THE EFFECT OF FIRE, WATER AND SMOKE ON VARIOUS ARTICLES OF MERCHANDISE

In considering the effect of a fire on various stocks it is generally conceded that the greatest salvage value will ordinarily be found in staples for the reason that these can be reclaimed and have a market even at a reduced price. This is particularly true for dry goods. Novelties, generally bought for gift purposes, lose almost their entire value when damaged. Among the many things affecting salvage value is the fashion of the day or style; a change of style may reduce the value of any article to practically nothing. Shopwear, indicated by faded colors, tarnished metallic embroideries, and soilage, to mention a few of the common effects, must be considered in determining values. In the following list little attempt has been made to estimate the value of salvage, the discussion being limited to cause and effect.

Velvets, Velveteens and Corduroys

The damage to velvets, velveteens and corduroys is governed by the quality. Velveteens being cotton, the color will run and the pile will be flattened beyond restoration. The silk velvets with cotton backs are affected very much in the same manner; even a few drops of water seeming to spot them badly. However, a piece of silk velvet may be soaked in water, taken out, shaken thoroughly and dried, without showing any ill effects. The common method used by milliners to freshen silk velvet is to hold it over steam. The cheaper grades of corduroy are filled with a glue preparation, and these water will, in small quantities, spot, and in large quantities take all the body out. The best grades of corduroy are almost undamageable by water.

Wall Paper

Serious losses occur where wall paper is stored in large quantities. The rolls are tied in bundles and the bundles stacked on end, presenting a most difficult salvage situation. It is practically impossible for men to climb the piles and spread salvage covers, due to the fact that the piles are easily knocked down resulting in chaos where order should prevail. It is impractical to wrap stock of this nature when in storage.

It is recommended that stock be kept away from side walls and at least 36 in. below the ceiling, that boards of five-ply thickness 5 ft. wide and 9 ft. in length be used between each tier to tie the stock. Larger dealers should welcome this suggestion as a means of keeping their stock in an orderly manner. They would benefit in the regular operation of their business aside from the value of such an arrangement in the event of fire.

Wash Goods

These are not liable to damage from water, as they are made purposely to wash. But there is always the danger of colors running, and the term "wash goods" is in many instances a misnomer. The better grades of wash dress goods are kept in the same manner as silks, and the same class of damage obtains. In all of the sheer materials a dressing is used to stiffen and give body to the fabric. If they are wet, even granting that the color will not run, the damage will be considerable, as the fabric will lose its body. This material will launder and look well; but the fact that it has lost its freshness will impair its salability. Shrinkage must always be watched for. A cheap quality of gingham will shrink as much if not more than any other fabric.

Wool

Wool in fleece does not burn readily, but the spontaneous heating subsequent to water damage takes the oil and tensile strength from it. It should be salvaged promptly.

Woolen Dress Goods

Woolens of all kinds are supposed to be affected quite readily, particularly by smoke. Smoke damage should not be claimed or allowed unless a trace of discoloration is evident on the material. Of course the porous or loose texture woolens will take the odor of smoke, even without discoloration, but this odor will leave the material if well aired. Woolen dress goods are covered on the outside with a heavy wrapping paper, and only the selvage edge is exposed. In a well kept stock smoke will not get much chance to reach the light colors; but water will damage them materially. Similar trouble will be encountered here as in the silks, due to colors running, but not to the same extent. In plain colors, such as dress goods are made of, the colors are not nearly so likely to run as in silks, where one piece may have half-a-dozen colors, and if one of them is affected the whole piece will be spoiled. A feature to be contended with here is the shrinkage. The different weaves are affected differently, the looser the weave the more likelihood there is of shrinkage. What is known as flannel cloth is very loose texture, and heat or hot smoke will draw it up or shrink it. Broadcloth is affected by water, which spots it.

Yarns and Knit Goods

Yarns and knit goods are very susceptible to damage. Smoke stains them very quickly and water will shrink or cause the colors to run. Shop wear and fading in yarns will occur even with the most careful merchant. Some shades will fade if exposed to the light, and will often fade even in the box, if they are kept in stock any great length of time. This damage must not be confused with fire damage.

USE OF PHANTOM ALARM BOXES AIDS IN DIRECTING APPARATUS

Companies Are Sent to Nearest Street Corner Rather Than to a Box of Particular Number

By W. J. CARROLL*

THE use of phantom fire alarm boxes is not as well understood as it might be. The general scheme briefly is this. A chief takes a map of his city and spots on it the regular boxes. Then he assigns a number to every important street corner. When an alarm comes in by telephone instead of telephoning the address to the nearest company or striking the nearest box, the man who receives the alarm strikes the number of the nearest street corner.

This is simple—so simple that its value is frequently overlooked, but like so many simple things its value lies in its simplicity. The use of phantom boxes sends the apparatus to the nearest street corner to the fire.

When an alarm is telephoned from the Central Fire Station to an engine company there is, of course, less danger of misunderstanding than when the public uses the telephone, but there is still the danger.

When this plan is used a full assignment is sent on each alarm. I am not going into the question of sending one assignment on box alarms and a different and smaller assignment on telephone alarms. All of us recognize that you do not need usually as large an assignment on automobile or brush fires although some chiefs rightly and from experience know the value of plenty of apparatus, even for brush fires where a house is menaced. Here are three reasons where the use of phantom boxes affects the operation of the fire department—it sends the department to the proper location; eliminates telephone errors, and brings a full assignment. It also provides a better numbering plan and visualizes the lack of boxes.

*Read before Convention of New England Association of Fire Chiefs, June, 1927.

Program, Cumberland Valley Convention

The tentative program of the 26th annual convention of the Cumberland Valley Firemen's Association, which is to take place at Westernport, Md., on August 9 to 11, according to Secretary C. L. Jacobs, is as follows:

Tuesday, Aug. 9. 10:30 a. m.—Opening session of the convention and memorial service. 2 p. m.—Business session of the Association. 9 p. m.—Pajama Parade.

Wednesday, Aug. 10. 10 a. m.—Closing session of Association. 1 p. m.—Firemen's Parade.

Thursday, Aug. 11. 10 a. m.—Prize Drill. 2 p. m.—Hook & Ladder and Hose Races. 7:30 p. m.—Band Contests.

Dancing will be held every evening in the Armory. There will be a number of prizes for competitions, parade, features, appearance, etc., ranging from $100 to $5.

Myersdale, Pa., Installs Siren—An electrically operated siren has been installed in Myersdale, Pa.

Inwood, N. Y., to Have New Fire Station—Construction will start soon on the new fire station for Inwood, N. Y.

ELKHART

Firemen's Pet Pipe
With Ladder Hook, Stream Shaper and Elk Shut-off Nozzle Attached

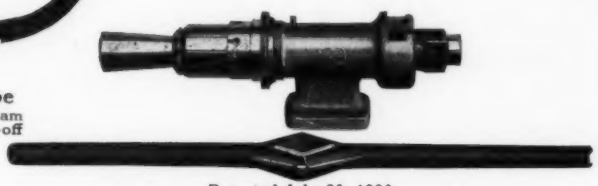
Complete line of

NOZZLES, EXPANDERS, HOSE FITTINGS, FIRE EXTINGUISHERS, FIRE DEPT. SUPPLIES.

ALL bearing our registered trade mark which is your guarantee of complete satisfaction.

SPECIFY "ELKHART"

Extinguishers and nozzles on your new apparatus and get the best.



Patented July 20, 1920.
Elkhart Unbreakable Expander

No. 3 Extinguisher
Lead Dump Bottle Type. No Glass Bottles to Cause Trouble

VISIT OUR EXHIBIT AT PORTLAND

ELKHART BRASS MANUFACTURING CO.
ELKHART, INDIANA

WORCESTER
ALARM SIGNAL

Made to meet local conditions. Steam or air operated. Send for catalog R-51.

Successful Since Sixty-Eight

UNION WATER METER CO.
Worcester, Mass.
New York—50 Church St.
Philadelphia—411 Bulletin Bldg.

UNION

Water Meters - Chronometer Valves
Easy Turning Stops - Pressure Regulators
Presses for Lining Pipe - Alarm Signals

Do they hear *You* Coming?

You can MAKE THEM HEAR you by using the same type of signal that is being used by the Locomotive. And why not? For 75 years the great American Railroads have been using WHISTLES to attract attention to an approaching train. If more effective warning signals existed, the railroads would be using them today—for they are spending millions annually to prevent the **DESTRUCTION** of **LIFE** and **PROPERTY**. Our Engineering Department has now made it possible for Fire Apparatus to also enjoy the protection of

BUCKEYE WHISTLES

A Warning Signal that Warns

BUCKEYE IRON & BRASS WORKS - DAYTON, OHIO

The Perfect Satisfaction and economy of wearing the

"FAMOUS KALAMAZOO"

Firemen's Uniforms has been proven by thousands of firemen. Catalog F501 will tell you all about them.

The HENDERSON-AMES CO.
KALAMAZOO, MICH.

In a HENDERSON
Uniform

you always get correct tailoring, dependable quality, reliable workmanship, at the lowest prices consistent with values.

Catalogue illustrating the popular Styles of Firemen's Service Parade Uniforms or for prize contests, as well as Shirts, Belts, Hats, Caps, Badges, Banners, &c., mailed on request.

Write giving Number of Outfits desired and color Cloth preferred.

HENDERSON & CO.
11th & Race Sts., Philadelphia, Pa.

JACOB REED'S SONS
Founded 1824 by Jacob Reed

FIREMEN'S UNIFORMS

Thoroughly tailored of especially selected fabrics. Uniforms that look well, wear well and that will give entirely satisfactory service.

Reed's Uniforms are most economical because they represent full value for the amount expended.

Write for catalog and prices.

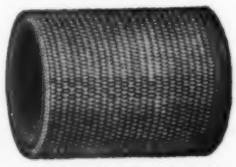
1424-1426 Chestnut St., Philadelphia, Pa.

Fire Hose Made With Solid Woven Cover

Quaker Fire Hose is built with a strong, circular-woven jacket over a tube of specially compounded rubber. It stands highest internal pressures and gives long wear under severe service conditions.

QUAKER CITY RUBBER CO.

Manufacturers of
Daniel's P.P.P. Rod Packing
Main Offices and Factories
Wissinoming, Philadelphia



Branches: New York, Chicago, Pittsburgh, San Francisco

Triple Combinations

300-350 and 500 Gallons Capacity

Light and Heavy Hook and Ladder Trucks.
Miscellaneous Fire Fighting Equipment.
Fire Department Ladders.

Write us when interested

COMBINATION LADDER CO., Inc.
381 Fountain St. Providence, R. I.

SOUTHWORTH

Quality Fire Apparatus

300 to 1000 Gallon Triple Combination Pumpers, City Service Trucks, Combinations and Chemical Cars.

Connections solicited throughout the East

Southworth Machine Company
Fire Apparatus Division

Address all correspondence to the Chelsea Office.

Sales Office	*Telephone*	*Factory*
52 Sagamore Ave., Chelsea, Mass.	Chelsea 2105	Portland, Maine

EDDY
Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience go into their manufacture and they embody valuable and exclusive features.

Write for the Facts

EDDY VALVE CO.
Waterford, N. Y.
James B. Clow & Sons, Chicago Agents

COREY Hydrants as manufactured by "Rensselaer" are being used to fight fire in every State of the Union. Made of the very best material and workmanship.

"The Rolls-Royce among Fire Hydrants"

RENSSELAER VALVE CO.,
TROY, N. Y.

Architecture and Fire Prevention

Eliminate the Cause, and There Can be No Big Fires—Building Codes and Building Construction of Paramount Importance

By N. N. WOLPERT

THE solution to the problem of reducing the fire losses in this country does not lie alone in the education of the masses, as a good many are lead to believe, but also rests in the introduction into building codes of the various cities, provisions for protection of vertical and horizontal openings of structures.

There is a certain characteristic of a people that cannot be made over, and it is useless on the part of educational reformers to try and attempt it.

Education and tidy housekeeping methods are constantly being urged as a means of reducing the amount of property consumed by fire. Dare I walk into your home and tell your wife that she is careless and untidy in her domestic duties! The New England housewife and the women in many sections of the West and mid-West are famed for the cleanliness of their homes and their industry in keeping their homes spic and span. Yet poor housekeeping methods are given as one of the contributing evils in increasing the fire loss.

Dangers in Large Establishments

Lecturers preach prevention of fires to the small home-owner and then close their eyes to the flaunting violations in large factories, office buildings and industrial structures. A fire in a home jeopardizes the loss of an individual, and if conditions are right, or the adjacent buildings are weak in architectural features, may cause a conflagration. Destruction of an industrial building, on the other hand, will take a livelihood away from a large number of people. Modern office buildings, commonly termed skyscrapers, house as many as eight or nine thousand people. A fire in a building of this type, even if slight, will interrupt business and might possibly cause a panic.

A study of any of the large fires will present surprising information. Many of the important fires may be traced to neglect of architects to protect the vertical openings in buildings—elevator shafts and open stairways—and often to a building code which does not clearly define or provide measures for properly protecting buildings against fire. Invariably large unsprinklered areas tend to cause a large fire. All fires are the same size when they start.

Fire Chief Deserves a Voice

Society has made the fire chief responsible for the extinguishing of fires, confining the blaze to its point of inception, and keeping the fire loss small. Now complete the circle. Why in turn should not the fire chief expect society to cooperate and why should he not hold them morally responsible for sane building construction. Mechanics will not think of working unless the scaffold is safe, and yet the fire chief sees structures being erected which he knows will some day result in a disastrous fire.

The head of a fire department should not be looked at only as the chief of an organization developed to fight fires. He should be given credit for a wealth of information that he has accumulated in his long years of service in preventing fires and in inspecting structures. He knows the value of automatic sprinklers, protected openings, fire doors, fire walls, proper distribution of loading which architects either disregard or fail to recognize. The architect is concerned more with the aesthetic side of the problem—means to design a building pleasing to the eye, and if the building code is an obstacle in his path, why, plans are devised whereby some loop-hole or technicality is discovered.

Approval by Fire Department

Most cities require that all plans be submitted to the building department—they should do more and require, in addition, that a set of plans be filed with the fire department for approval. When one's life is endangered, as the firemen's often is, in buildings of flimsy construction, one is bound to look at things in a more critical manner and try to confine items to the letter of the law. Recommendations made by the chief should be made mandatory. Building plans should not be approved unless they carry the stamp of approval of the fire department.

The era of the old-type fire fighter is gone. In his place is one who has a knowledge of hydraulics, fire-fighting methods, building construction and industrial hazards. He should be consulted when planning a new structure—his advice is free and is one of the few valuable things that is given gratis.

The fire department should have the cooperation of the planners of building codes. There must be no loop-holes or jokers in such an important set of regulations. They should not be flexible enough to permit designers of buildings to interpret the regulations to meet their own selfish requirements. A well designed code of building regulations is a mighty strong factor in reducing the possibilities of the spread of fire. A properly organized fire department is the first line of defense in superintending building construction to see that the recommendations of the department are carried out and that there are no violations of good fire prevention practice.

A STUDY of any of the large fires will present surprising information. Many of the important fires may be traced to neglect of architects to protect the vertical openings in buildings—elevator shafts and open stairways—and often to a building code which does not clearly define or provide measures for properly protecting buildings against fire.

The so called fireproof structure has often been the cause of large fires. While they are immune from fires from without, large areas which are minus the sprinklered protection so necessary in fighting fires in its inception, may become raging furnaces, once the fire is started. Risers and laterals should be of sufficient size to insure a supply of water to the sprinkler heads.

Unprotected Vertical Openings

To one who is interested in the reduction of the fire loss, the sight of an open unprotected vertical opening is a common sight. Many of the office buildings have an open wall which possesses the latent qualities of a chimney, and in time of fire, enables the heated gases to pass up and mushroom on an upper floor. Protect the openings and eliminate the draft. Unprotected horizontal openings, windows and the like, present potential possibilities from the spread of fire. A window broken in a building adjacent to one on fire enables the entrance of hot gases and increases the chances of the spread of fire. Thought given to the protection of the openings will pay the reward in the knowledge that the danger of fire from outside sources has been removed.

If you remember the large fire at the Thos. A. Edison plant, you will recall an example of what it means to neglect this phase of the problem. The works were so arranged that a number of fireproof industrial buildings with unprotected openings were grouped about one of flammable construction. The latter building caught fire and spread by means of the unprotected openings into the various fireproof structures. The loss of the plant in dollars was small in comparison to the loss in wages of the men deprived of their employment.

The time will come, when building codes are properly designed and architecture properly supervised by the fire department, and then the loss to fire will become appreciably smaller. Architecture is the only real solution to the fire prevention problem.

Fire Equipment Manufacturers Reorganized

The Fire Equipment Manufacturers Institute, which is composed of a large number of the leading manufacturers of fire fighting appliances in this country, has been reorganized with Charles Meigs as Commissioner.

The new offices of the institute are located at 17 East 49th street, New York, N. Y.

Mr. Meigs has had wide experience in the fire apparatus field, having served as manager of the old Kanawha Chemical Fire Engine Company of Charleston, W. Va., following which he was with the James Boyd & Brother, Inc., at Philadelphia, one of the former big manufacturers in the fire department field. Later he was president of the Foamite Firefoam Company which was later on consolidated with the O. J. Childs Company of Utica, forming the present Foamite-Childs Corporation.

It was upon this consolidation that Mr. Meigs severed his connection with the Foamite Firefoam Company. He brings to the institute a wide experience in the field of fire fighting apparatus and equipment and much constructive work may be expected under his administration.

The institute will hold its next meeting at West Baden, Ind., on September 27.

Siren Installed in Wildwood, N. J.—A new siren has been installed in Wildwood, N. J.

Centralia, Pa., Firemen Receive New Uniforms—The firemen of Centralia, Pa., have been equipped with new uniforms.

Duport, Pa., to Have Fire Alarm System—Bids were opened in Dupont, Pa., for the installation of a fire alarm system.

New Philadelphia, O., Awaits New Ladder Truck—A combination Ladder Company Ladder Truck is to be delivered to New Philadelphia, Ohio about August 1.

Virginia Firemen to Have Exhibits

Arrangements have been made for the forty-first annual convention and tournament, to be held in Alexandria, Va., on August 24 to 26, to hold an exhibit in connection with the gathering. The city armory has been obtained for this purpose, according to Everett A. Helmuth, chairman of the exhibit committee. It is a commodious building, with floor space of 60 by 85 feet.

A large attendance of firemen from the state of Maryland and from the District of Columbia is expected to be present at the convention.

A Pathetic Coincidence

A woman and her little boy went to St. John's Hospital in Long Island City, New York, recently about half past eleven o'clock in the morning to have the boy vaccinated preparatory to sending him to school next September. When she gave her name and address, the clerk looked up at her in amazement and then asked her to take a seat. The clerk hurried to the emergency ward and confided in Dr. Harry M. Archer of the Fire Department that a woman giving the same name and address of the fireman who had died but a few minutes before was at the office having her boy vaccinated.

She was Mrs. Edward Knapp. She was a widow and didn't know it. Her husband had passed on in the line of duty from the effects of a fire in the Manhattan Steam Bakery in Purvis street. Dr. Archer broke the news to her gently. She swooned and had to be comforted. That morning, on leaving home, Fireman Knapp's parting words were to be sure to take the boy to the clinic at St. John's for vaccination.

How Albany Won Fire Waste Award

(*Continued from page* 774)

The Council authorized the Board of Judges to give honorable mention for their state to those cities whose record, in the opinion of the Board merited this distinction. The following cities were accordingly selected for this honor, all having made the best record in the contest in their respective states:

Alexander City, Ala.
Fullerton, Cal.
New Britain, Conn.
Wilmington, Dela.
Albany, Ga.
Pekin, Ill.
Indianapolis, Ind.
Winfield, Kan.
Owensboro, Ky.
New Orleans, La.
Hagerstown, Md.
North Adams, Mass.
Detroit, Mich.
St. Paul, Minn.
St. Joseph, Mo.
Billings, Mont.
Laconia, N. H.
Rochester, N. Y.
Mansfield, Ohio.
Tulsa, Okla.
Portland, Ore.
Philadelphia, Pa.
Memphis, Tenn.
Fort Worth, Texas.
Burlington, Vt.
Petersburg, Va.
Yakima, Wash.
Huntington, W. Va.
Milwaukee, Wis.
Casper, Wyo.

New Pipe Holder

A number of Pacific Coast fire departments have adopted the Macgregor "Hose Conqueror," a new piece of equipment which was invented by Wallace Macgregor of Berkeley, Cal., during the past year. Mr. Macgregor is the designer of the Macgregor Portable Monitor and Safety Stand which was first displayed to the nation's chiefs' convention at New Orleans last year.

The "Hose Conqueror", light and easily handled by one man with safety has appealed to the smaller departments especially, although a number of these pipe holders have been adopted by large city departments. Oakland, Cal., is now using five pieces.

The apparatus can be left alone or be manipulated by directing the stream in any needed direction. Its base is arranged to support the apparatus with stability and safety. It is designed to permit the use of one or two hose lines with 1", 1⅛", 1¼" and 1½" nozzle tips and 150 pounds or more of water pressure.

When not in use the Hose Conqueror can be collapsed and carried easily. The body is made of bronze while tool steel legs support it firmly wherever it is set for use. It will be displayed and demonstrated at the Portland convention.

Riverton, N. J., Receives New Pumper—A pumper has been delivered to Riverton, N. J.

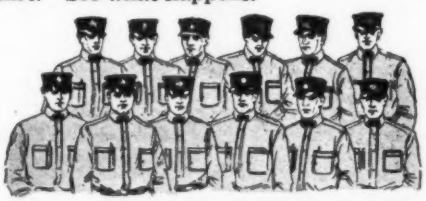
Art Commission Approves Campbell Memorial—The art commission of Portland, Ore., has approved the beautiful $50,000 memorial to David Campbell and other dead of the fire department. However, the commission warned the council that the construction made necessary by increasing traffic conditions in that section would decrease the value of the monument.

?

IS THE SHIRT PART of the UNIFORM

Sometimes you wouldn't think so. For instance, the twelve men pictured below are all members of the same company in the same city in the same country. They're supposed to be uniform; they are—from the ears up.

Now take the same twelve men and put them into the same style and pattern of shirt. See what happens.



You ought to be convinced now that the shirt *is* really part of the uniform, and a very important part. Now let us show you how to buy uniform shirts.

FOR BETTER APPEARANCE FOR ABSOLUTE UNIFORMITY

First, specify one style of shirt for entire department. The Signal two-collar shirt is the one to specify because it's dressy, long-wearing, practical, and wash proof. This style is now regulation in several American cities, and, if your department is not wearing it, you ought to find out more about it. Write us for particulars.

SIGNAL SHIRT COMPANY
M1 RACINE, WISCONSIN

Signal
REG. U.S. PAT. OFF.

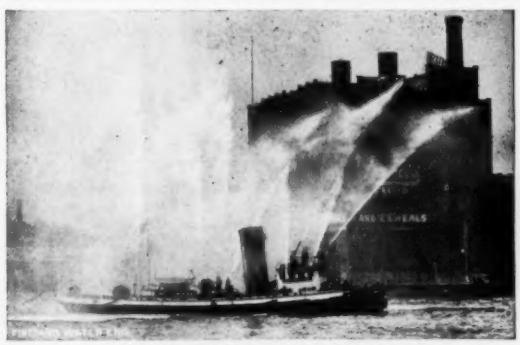
Eastman Nozzles and Deluge Sets

Are designed by Engineers who for over thirty years have specialized in equipment for producing superior fire-fighting streams in all sizes unsurpassed for solidarity, distance and effectiveness, and safely handled under all pressures.

Eastman Deluge Sets provide for fighting large fires in the simplest and most practical manner possible. Be sure to specify Eastman Nozzles.

WRITE FOR CATALOG

SAMUEL EASTMAN COMPANY, Concord, N.H.



MORSE
Fire Boat Equipment

Invincible and Callahan Nozzles

Fire Department Supplies

are in use throughout the country and giving unsurpassed service.

Every fire official should be fully acquainted with Morse equipment and have our catalog and other descriptive literature on file for ready reference whenever considering the purchase of new equipment.

You will find that it pays.

Write for Catalog

Andrew J. Morse & Son, Inc.
221 High Street Established 1837 **Boston, Mass.**

CARPENTERLITES

Portable Electric Searchlights for Fire Departments

Two Switches

Two Filament Bulbs

Powerful

Aluminum Construction

Universal Joint Motion

Dependable

Send for catalog and prices of full line

Carpenter Mfg. Company

125 Broadway, Boston, Mass.

THE DENVER SIREN

Now used in 43 of the United States, Canada and abroad.

Motor driven on any electric circuit.

Write for Special Bulletin

Hendrie & Bolthoff Mfg. and Supply Co.

Denver — Colorado

LARKIN Shut-off Nozzles

Over 2000 Fire Departments

have 15,000 Larkin Shut-off Nozzles in service. They have a successful record that is not exceeded by any article used in the fire service. Specify and insist upon them in buying new apparatus.

Write for catalog

The LARKIN Mfg. Co.

Dayton, Ohio

High Grade Fire Dept. Supplies of All Kinds

YOUR LUNGS

are important to you.

You cannot burn or irritate them by smoke, gas or flame if you wear a

DONTFEAR

Smoke and Fume Respirator

Price $5. With airtight goggles and 5 extra canisters $7.50.

Send for descriptive catalogue.

Gibbs-Wahlert Mask Co.

Factory:
386 Jay St.,
Brooklyn, N. Y.

Address communications to
Station G, Box 168,
New York City

HAHN

Motor Fire Apparatus

Write for literature and prices on our 250, 350, 500 and 750-gallon triple combinations, chemical and hose combinations and city service trucks.

Hahn Motor Truck Co.,

Hamburg, Pa.

Clifton Salvage Covers

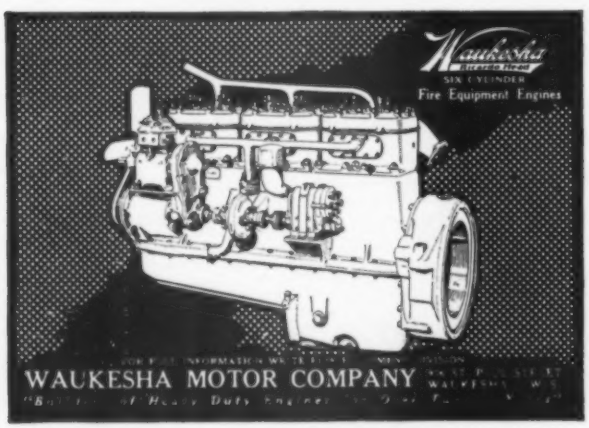
Are made of strong, heavy duck and lapped seams and are designed of such thickness and weight as to be light enough to be handled quickly and rigid enough for the most strenuous service. They are rubberized on both sides with a double coating of a high grade, long life, rubber compound.

CLIFTON SALVAGE COVERS are built to stand the heaviest abuse and are used by many of the large Protective Departments.

May we send you further particulars?

Clifton Manufacturing Company

Jamaica Plain District :: Boston, Mass.



WAUKESHA MOTOR COMPANY

Quick-Acting Reliable

Anderson -Hale Improved

FIRE STATION DOOR OPENERS

Over 1,300 sets of Anderson-Hale Fire Station Door Openers are in successful use. They provide simple, durable, quick-acting doors that open inward. No obstruction to sidewalk. Attractive in appearance, cannot sag, closes tight, excludes cold, gives clear opening. Opens from driver's seat or from floor. Many repeat orders from users.

Write for complete information.

The Anderson Coupling & Fire Supply Co.

Mfrs. Motor Fire Equipment and Fire Supplies

Kansas City, Kansas

FIRE DEPARTMENT ACTIVITIES

Milwaukee, Wis., Has New Fire Station—A new fire station was officially opened in Milwaukee, Wis., on July 16. It will house a four-wheel drive apparatus.

Huntington, Ind., Purchases Chemical Car—A four-ton truck equipped with chemical tanks has been purchased by Huntington, Ind.

Waverly, N. Y., Asks for New Pumper—The fire council of Waverly, N. Y., has requested the purchase of a new pumper to replace the one which is now in service for twelve years.

Birmingham, Mich., Still Talking About Station—Action on the location of a fire station in Birmingham, Mich., has again been blocked.

Peninsula, O., to Purchase Apparatus—Bids have been invited by Peninsula, Ohio, for supplying a pumper equipped with two 35-gallon chemical tanks.

Berkeley, Cal., Names Assistant Chiefs—Two assistant chiefs have been appointed in Berkeley, Cal., in accordance with the recommendations of the city manager.

Canton, N. Y., Has New Ladder Truck—A public demonstration was held of the new Buffalo ladder truck delivered to Canton, N. Y.

Brackenridge, Pa., Awaits New Pumper—The firemen of Brackenridge, Pa., are awaiting the delivery of their new 1,000-gallon Seagrave pumper.

Nolte Appointed Fire Marshal of W. Va.—Charles W. Nolte has been offered the position of state fire marshal of West Virginia by the state auditor.

Salem, Ore., Plans for More Stations—Plans are being considered in Salem, Ore., to erect fire stations in the residential districts remote from the central fire station, and for the installation of fifty additional fire alarm boxes.

Five Officers Promoted in San Francisco, Cal.—Five officers were promoted in San Francisco, Cal. Two captains were raised to the ranks of battalion chief and three lieutenants were made captains.

Toledo, O., Wants More Fire Stations—The Safety director of Toledo, Ohio has requested that two new fire stations be erected—one in the upriver district and the other near Central avenue. It has been estimated that the sites will cost $12,500.

Fifteen More Firemen for Milwaukee, Wis.—Chief Peter Steinkellner announced that fifteen more firemen will be added to the force and will man the new fire station that has been opened.

Hanover, N. H., Has New Ladder Truck—A Maxim ladder truck has been delivered to Hanover, N. H. It is equipped with a fifty-gallon booster tank in addition to the usual ladder appliances.

Haddon Heights, N. J., Has New Pumper—A Hale pumper has been delivered to Haddon Heights, N. J. It replaces an old Brockway machine that has been in service for thirteen years.

Shelton, Wash., Receives First Fire Apparatus—A Howard-Cooper fire apparatus has been delivered to Shelton, Wash., and is the first fire apparatus in the department. The apparatus will be cared for by the American Legion.

St. Paul Band Awarded $100 Prize—The firemen's band of St. Paul, Minn., has been awarded the $100 prize for the best band at the convention of the Minnesota firemen in Duluth. The money will be placed in a fund for the purchase of new uniforms.

Watson, W. Va., Has Bad Fire—A pumper drafting water from a trough, saved the mining town of Watson, W. Va. Two homes were destroyed but the flames were prevented from spreading.

London, Ky., Has New Pumper—A 400-gallon Deluge Master Fire-Fighter has been delivered to London, Ky. The pumper was purchased by popular subscription, and it is necessary to depend on cisterns for the water supply.

Sebring, Fla., to Erect Fire Station—Plans have been approved for the erection of a fire station in Sebring, Fla., to cost $40,000. Included in the building will be an apartment for the chief.

Altoona, Pa., to Have New Station—Necessary legislation was passed to permit the construction of a new fire station in Altoona, Pa. The electrical work will be done by the city's electrical department.

Oppose Installation of Fire Siren—Much opposition developed when it was planned to install a fire alarm siren in North Woburn, Mass., and the matter came up for debate in the town meeting.

Boston Commissioner Favors Centralizing Companies—Fire Commissioner Hultman, of Boston, is in favor of centralizing two or three fire companies in one station rather than maintaining a large number of single fire houses.

Of 343 Boston Privates, 182 Pass for Promotion—Out of 343 privates in the Boston fire department who took the recent examination for promotion to rank of lieutenant 182 received marks making them eligible for advancement when vacancies occur.

New Headquarters and Fire Alarm for Milford—According to specifications prepared and submitted to the Board of Fire Commissioners at Milford, Connecticut, the cost of the new fire headquarters which the town will soon build, will be $113,136. A new fire alarm system will be installed at a cost of $16,000 and machinery for a repair shop will be purchased for $2,000.

Must Give Up Position or Lose Pension—The Massachusetts Civil Service Commission has notified Ex-Chief Peter E. Walsh, who is now serving as Superintendent of the Fire Prevention Division of the Boston Fire Department that he must either accept the position permanently and give up all right to his pension as an ex-chief or must relinquish his position to retain the pension right. His pension was temporarily suspended when he was appointed to his present position by Fire Commissioner Eugene C. Hultman.

New Siren for Fire Apparatus

A new electrically operated siren for use on fire apparatus has been developed by the Federal Electrical Company of Chicago, Ill.

The siren is of streamline design and all visible parts including the bracket and base are heavily nickel plated. It is entirely enclosed to make it weatherproof.

The motor housing and horn of the siren are made of spun brass. The base is constructed from cast brass while the stator and rotor are die cast from a good grade of aluminum. The Universal motor which operates the siren may be had in voltages varying from six to 250 volts.

The siren can be mounted on the apparatus in either the horizontal or vertical position. The siren is said to have a sound radius of one-fourth mile.

Federal Siren

Gold Ax Stolen

Out in Los Angeles, Cal., they think a great deal of Chief Ralph Scott. In fact the Boyle Heights Improvement Association thinks so much of the chief that they ordered a gold ax, valued at $200, to be presented as a token of appreciation.

And Chief Scott, as prominent as he is, is just like one of the ordinary fellows. He knew he had to make a speech and so he wrote out a nice little address so that he could memorize it before the ax was formally presented. Memorizing a speech is harder than fighting fires.

A gold ax is an uncommon thing. It was placed on display in a window of a music store. But some thief smashed the window and stole the ax. And all the study and hard work on the part of Chief Scott in memorizing the speech has been wasted.

PROPOSED IMPROVEMENTS

Lawrence - Cedarhurst, Nassau Co., N. Y.—A new Ahrens-Fox chased for the Lawrence-Cedarhurst fire department.

Rainier, Columbia Co., Ore.—Fire department organized here with Edward Brough as chief.

Monterey, Calif.—Board of Trustees discussed necessity of voting on a bond issue for the purchase of a ladder truck for the fire department.

Watsonville, Santa Cruz Co., Calif.—Fire Committee of the Board was authorized to proceed with recommendations for the improvement of the fire department. The Board of Fire Underwriters have recommended the purchase of a pumper, service truck, ladders, fire drill tower and additional hose.

Sebring, Highlands Co., Fla.—Plans for the erection of a new fire station at cost of $40,000 has been approved by the City Council. To be erected at Lemon and Mango Sts., according to reports. A. C. Altwater, Chief of Fire Dept.

Russell City, Ky. (Greenup Co.)—The purchase of 1400 feet of fire hose was authorized by the City Council.

Alloway, Salem Co., N. J.—A fire department is being organized here. John R. Powell, is temporary Secretary.

Colfax, Placer Co., Cal.—Fire department requested City Board of Trustees to cooperate in the purchase of a pumper and other fire equipment.

Wasco, Kern Co., Cal.—Fire Commissioners to call for bids shortly for fire apparatus for the Wasco Fire District.

Yreka, Siskiyou Co., Cal.—Salmon Mountain Fire Department raising funds for the purchase of a new fire siren.

Litchfield, Litchfield Co., Conn.—Fire Department making plans for raising funds for the purchase of a new piece of fire apparatus.

Waterbury, New Haven, Co., Conn.—Contract awarded for the erection of the proposed new fire station here. H. H. Heitman, Chief of Fire Dept.

Belleville, St. Clair, Ill.—City Council purchased a 750-gallon Pirsch pumper for the fire department at cost of $11,750.

Chicopee, Mass. (Hampden Co.)—Contract awarded for the erection of the Aldenville fire station.

Worcester, Mass.—Reports state that the purchase of fire equipment for better fire protection is being urged. C. L. McCarthy, Supt. of Water Works.

Belvidere, Warren Co., N. J.—Common Council purchased an American-La France pumper for the fire department at a cost of $8,000.

Willard, Torrance Co., N. Mex.—New chemical fire engine to be purchased by the city in the near future.

Hartford, Washington Co., N. Y.—Fire company organized here with Rev. Roy E. Dunckel as president and R. A. Minor, chief.

Woodburn, Marion Co., Ore.—It is being planned to purchase a chemical truck for use in rural districts. David Jackson, Chief of Fire Dept.

Amityville, Suffolk Co., N. Y.—Plans being made for the erection of a new fire station in Mill Street. Abner B. Inglee, Chief of Fire Dept.

Camp Hill, Cumberland Co., Pa. New fire alarm system to be installed here. A. C. Blain, Chief of Fire Department.

Olyphant, Lackawanna Co., Pa.—Borough Council purchased an American-La France fire engine for the fire department, at cost of $11,500.

Elk Grove, Sacramento Co., Cal.—Fire Commissioners considering the purchase of a chassis for the fire department.

Los Angeles, Cal.—East Montebello County Fire Protection District was created recently.

Groton, New London, Conn.—Reports state Groton Fire Company making plans for the erection of a new fire station near Centre Groton.

New Hampton, Chickasaw Co., Ia.—Fire department raising funds for the purchase of a piece of fire apparatus, for use in rural districts as well as in the town.

Rockwell City, Colhoun Co., Ia.—Fire Department raising funds for the purchase of a new piece of apparatus.

Norristown, Montgomery Co., Pa.—Norristown Fire Company to purchase new fire hose in the near future.

Springdale, Allegheny Co., Pa.—Movement being made for installation of a more efficient fire alarm system here.

Lufkin, Tex.—City to vote on Aug. 9th, on a $20,000 bond issue for erection of new fire station.

Farmville, Prince Edward Co., Va.—John G. Shannon has resigned as chief of the Fire Department here.

West Dundee, Kane Co., Ill.—It is being urged that a new piece of fire apparatus be purchased of the fire department here. T. F. Eichler, Village President.

Elwood, Madison Co., Ind.—Adequate equipment costing approximately $20,000 will be purchased by the city within the next three months. Mr. Stokes, Chief of Fire Dept.

Proposals for Fire Apparatus

CITY OF MALDEN, MASS.

Bids opened August 23, 1927.

Sealed proposals will be received by the Fire Commissioner of the City of Malden, Mass., at Headquarters, Malden Fire Department, Sprague Street, Malden, Mass., until 8 P. M., (daylight saving time), August 23, 1927, for a Motorized Triple Combination Pumping Engine, 750 gallons capacity.

Proposals must be endorsed "Proposals for Motorized Triple Combination Pumping Engine." Each bid shall be accompanied by complete and detailed specifications of the apparatus and equipment which it is proposed to furnish. Specifications will include Booster Tank.

The Fire Commissioner reserves the right to reject any and all proposals or to accept the proposal deemed best for the Fire Department of the City of Malden.

C. David Berg,
Fire Commissioner.

Dated: July 9, 1927.
7-27-27

For Sale
Fire Apparatus

American - LaFrance torpedo type combination chemical and hose car. In service less than three years. Run 1000 miles. In excellent condition. Price very reasonable. Apply Box 143, % FIRE ENGINEERING, 225 W. 34th St., New York, N. Y.

7-27

Progress in Handling Chimney Fires

Although this country has long suffered from sooty chimneys and fires resulting therefrom, it was very slow in developing a chemical compound for cleaning chimneys and removing soot. On the other hand countries abroad have been using chimney cleaning compounds for years and with great success.

It was only a year or so ago that the Kilsoot Chemical Company placed on the market their new product "Kilsoot," a powder which is used for removing soot and extinguishing chimney fires. Since being made available, demands for it have increased at an astonishing rate until at the present time besides the large domestic trade, twelve foreign countries are using it in large quantities.

The action of this chemical is quite simple in cleaning chimneys. First, a good hot bed of coals is provided in the furnace or stove after which a package of Kilsoot is spread over the coals and the stove or furnace closed up. It is left in this condition for possibly a half hour after which time the soot has been destroyed by oxidation. Although only comparatively a new product Kilsoot has received the endorsement of quite a large number of prominent chiefs.

At the New England Fire Chiefs Convention it was shown for the first time before any of the larger associations and proved one of the points of interest. A display will be made at Portland, Oregon—on the other side of the country—and a more elaborate arrangement provided to show the effect of Kilsoot.

Exhibit of Kilsoot Chemical Company at the Portland Convention of the New England Association of Fire Chiefs.

The illustration herewith shows the display of the Kilsoot Chemical Company at the Portland, Maine, Convention of the New England Association of Fire Chiefs.

Old Cable Blamed for Fatal Boston Fire

A short circuit in an old electric cable is believed to have caused the fire which destroyed the residence of William L. Shearer, Jr., at 47 Bay State Road, Boston, Mass., causing the death of four women.

The fire had obtained great headway when discovered at 3 a. m. by a newspaper man on his way home from work. The only occupant of the house who escaped was the housekeeper and she was rescued from a window ledge in the nick of time by the first ladder company to reach the scene.

H. BELKNAP.

Heads Boston List for District Chief—Captain John J. Kenney heads the eligible list in the Boston, Mass., fire department for promotion to rank of district chief.

6 Patented Features

ERICK SIREN

Thorough Weather Protection

Erick Sirens do not clog up. Snow and ice cannot enter and stop sounding rotor. Completely protected and sheltered from outside influences.

Features That Prove Supremacy

Instant Alarm

Every telephone is a fire alarm station, permitting operator to sound alarm instantly, giving your fire department a chance to get the jump on the fire.

Universal Sound Projector

The Erick Sound Rotor and Deflector is built to instantly send a Fire Alarm.

Our Free Trial offer is made in all sincerity. We welcome your inquiry.

ERICK ELECTRIC SIREN CO.

STATE AND FILLMORE AVE., ST. PAUL, MINN.

Ready

Keenly alert. Ready at any hour of the day or night to protect both fire alarm system and operators. That is the service rendered by VAC-M Arresters—the arresters based upon a principle that is unequaled.

Type No. 4, Single line protector

VAC-M Arresters

are economical, easy to install and incomparably efficient.

The National Electric Specialty Co.

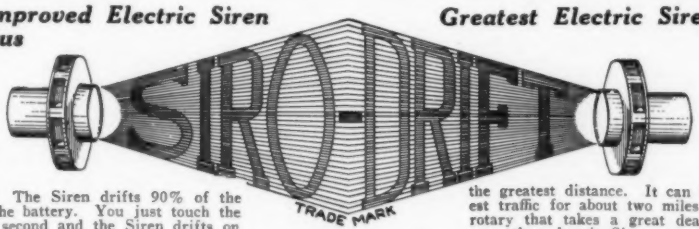
Toledo, Ohio

The New and Improved Electric Siren for Fire Apparatus

SIRO-DRIFT

A Siren that will operate on one-tenth of the battery juice of any other electric Siren of its size. The Siren drifts 90% of the time without the aid of the battery. You just touch the Siren button for one-half second and the Siren drifts on for two or three minutes.

One-half second of current, applied means ten seconds running without any current, with plenty of noise—or two to three minutes at a slower rate of speed.



Greatest Electric Siren Ever Built for Fire Apparatus

SIRO-DRIFT

Is 8 inches in diameter and gives the rising and lowering tones that carry the greatest distance. It can be heard through the thickest traffic for about two miles. Has a specially designed rotary that takes a great deal less power to drive than any other electric Siren.

We gladly ship a SIRO-DRIFT SIREN to any city on approval, transportation prepaid. Comes in three brackets—cross bar, on frame in front of radiator and under-the-hood.

Send at once for complete information

B & M Siren Manufacturing Co. LESTER H. MILES, *Owner*
929-931 South Main Street, Los Angeles, Calif.

BI-LATERAL FIRE HOSE

THE BI-LATERAL FIRE HOSE CO.

230 West Randolph St., Chicago, Ill.

The City of Wheeling just purchased 5,000 feet of Bi-Lateral Fire Hose coupled with rocker lug couplings. This city purchased 5,000 feet last year and it is believed that as soon as their department is equipped with this improved construction in fire hose they will be able to cut their hose expense to less than half of what it has been previously. Let the BI-LATERAL FIRE HOSE COMPANY tell you why this may be true.

Novo Acid Jars & Holders

of every description, stronger than lead and non-corrosive. Used by departments throughout the country.

Chemical Tanks and Lally Quick Opening and Self-packing Top for Chemical Tanks

Lally Improved Fire Hose Couplings, Fire Extinguishers and Charges, Fire Hose and Fire Department Supplies in General

Send for Complete Catalog

LALLY FIRE APPLIANCE CO.

Wilmington Brass Co., Wilmington, Del.

RED ARROW SIREN

Siren with Storm Hood

1. Double-tone, and of greatest carrying power.
2. Ball bearings throughout.
3. Accurately machined and balanced.

30 Days' Free Trial

Write for Circulars

DECOT MACHINE WORKS
Sauk City, Wis.

MAXIM FIRE APPARATUS

If your apparatus is Maxim-built it will prove dependable and reliable at all times.

Complete information upon request.

MAXIM MOTOR COMPANY, Middleboro, Mass.

Metropolitan Sales Agents:
The Woodhouse Manufacturing Co., 156 Chambers St., N. Y.

CONVENTION DATES

July 25-28—DOMINION ASSOCIATION OF FIRE CHIEFS. 19th Annual Convention, Hull, Quebec. Secretary, Chief James Armstrong, Kingston, Ont.

July 27-28—VERMONT STATE FIREMEN'S ASSOCIATION. 38th Annual Convention, St. Albans, Vt. Secretary, Edwin D. Moore, Bennington, Vt.

July 31-Aug. 1-2—IDAHO STATE FIREMEN'S ASSOCIATION. Annual Convention, Wallace, Idaho. Secretary, Willard Adams, Rigby, Idaho.

Aug. 1-2—WASHINGTON STATE FIREMEN'S ASSOCIATION. Annual Convention, Chehalis, Wash. Secretary, H. S. Jenkins, City Electrician, Fire Headquarters, Bellingham, Wash.

Aug. 4-6—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. 34th Annual Convention, Portland, Ore. Secretary, State Fire Marshal Jay W. Stevens, 1014 Merchants' Exchange Bldg., San Francisco, Cal.

Aug. 6—CALIFORNIA STATE ASSOCIATION OF FIRE CHIEFS. Annual Convention, Portland, Ore. Secretary, Chief William Cooper, Richmond, Cal.

Aug. 7-8—OREGON STATE FIRE CHIEFS' ASSOCIATION. 8th Annual Convention, Portland, Ore. Secretary, Thomas Coates, Tillamook, Ore.

Aug. 8-9—UTAH STATE FIREMEN'S ASSOCIATION. 20th Annual Convention, Springville, Utah. Secretary, H. E. Anderson, Fire Headquarters, Salt Lake City.

Aug. 9—MASSACHUSETTS PERMANENT FIREMEN'S ASSOCIATION. Annual Convention, New Bedford, Mass.

Aug. 9-11—CUMBERLAND VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. 26th Annual Convention, Western Port, Md. Secretary, C. L. Jacobs, Waynesboro, Pa.

Aug. 9-12—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 55th Annual Convention, Portland, Ore. Secretary Chief J. J. Mulcahey, Yonkers, N .Y.; Executive Secretary, State Fire Marshal Jay W. Stevens, Merchants' Exchange Bldg., San Francisco, Cal.; Chairman, Exhibit Committee, Chief Albert Herring, Murphysboro, Ill.

Aug. 14-16—NEW YORK STATE PERMANENT FIREMEN'S ASSOCIATION. Annual Convention, Elmira, N. Y. Secretary-Treasurer, Frank A. Emden, 1200 Lenox Avenue, Utica, N. Y.

Aug. 16-19—FIREMEN'S ASSOCIATION, STATE OF NEW YORK, and WESTERN NEW YORK VOLUNTEER FIREMEN'S ASSOCIATION. Joint Convention of both associations, Niagara Falls, N. Y. Secretary, State Association, Fred A. Davis, Fort Edward, N. Y.; Secretary, Western N. Y. Association, Henry A. Clark, 21 Porter Avenue, Batavia, N. Y.

Aug. 19-20—CONNECTICUT STATE FIREMEN'S ASSOCIATION. 45th Annual Convention, West Haven, Conn. Secretary, D. W. Harford, South Norwalk, Conn.

Aug. 22 (week of)—NORTH CAROLINA STATE FIREMEN'S ASSOCIATION. Annual Convention, Greensboro, N. C. Secretary, John L. Miller, Concord, N. C.

Aug. 24-26—VIRGINIA STATE FIREMEN'S ASSOCIATION. 41st Annual Convention and Tournament, Alexandria, Va. Secretary, E. K. Landis, Pulaski, Va.

Aug. 24-27—CALIFORNIA STATE FIREMEN'S ASSOCIATION. Annual Convention, Stockton, Cal. Secretary-Treasurer, H. E. Strasser, 1171 Tenth Street, San Diego, Cal.

Sept. 5-7—COLORADO STATE FIREMEN'S ASSOCIATION. 11th Annual Convention and Tournament, Longmont, Col. Secretary, Clinton Turnbull, 303 Jacobson Bldg., Denver, Col.

Sept. 7—DELAWARE STATE FIREMEN'S ASSOCIATION. 7th Annual Conference, Rehoboth Beach, Del. Secretary, Sam H. Carson, Dover, Del.

Sept. 7-8—MISSOURI STATE FIRE CHIEFS' ASSOCIATION. 5th Annual Convention, Kirksville, Mo. Secretary, District Chief J. T. Lynch, Kansas City, Mo.

Sept. 7-8—MISSOURI ASSOCIATION OF FIRE FIGHTERS. 2nd Annual Convention, Kirksville, Mo. Secretary M. J. Mulvoy, 3500 S. Grand Boulevard, St. Louis, Mo.

Sept. 12-14—ARKANSAS STATE FIREMEN'S ASSOCIATION. Annual Convention, Russellville, Ark. Secretary, H. D. Compton, Little Rock, Ark.

Sept. 13-15—ILLINOIS FIREMEN'S ASSOCIATION. 40th Annual Convention, Jacksonville, Ill. Secretary, Roy A. Alsip, Champaign, Ill.

Sept. 13-15—MASSACHUSETTS STATE FIREMEN'S ASSOCIATION. Annual Convention, Salem, Mass. Secretary, D. J. Looney, 1046 Old South Bldg., Boston, Mass.

Sept. 20-21—IOWA STATE FIREMEN'S ASSOCIATION. 50th Annual Convention and Anniversary, Emmetsburg, Ia. Secretary E. E. Parsons, Marion, Ia.

Sept. 22-24—NEW JERSEY STATE FIREMEN'S ASSOCIATION. 50th Annual Convention and Anniversary, Atlantic City, N. J. Secretary, William Exall, Chamber of Commerce Bldg., Newark, N. J.

Sept. 23—NEW JERSEY STATE FIRE CHIEFS' ASSOCIATION. Annual Meeting, Atlantic City, N. J. Secretary, Fred A. Trowbridge, 17 South Street, Morristown, N. J.

Oct. 4-6—PENNSYLVANIA STATE FIREMEN'S ASSOCIATION. Annual Convention, Shamokin, Pa. Secretary, Charles F. Clark, 411 Bellevue Avenue, Wayne, Pa.

OCT. 17-19—KANSAS STATE FIREMEN'S ASSOCIATION. Fortieth annual convention, Kansas City, Kans. K. D. Doyle, secretary, Wamego, Kans.

Oct. 17-19—KANSAS STATE ASSOCIATION OF FIRE CHIEFS. Eleventh annual meeting, Kansas City, Kans. Secretary, K. D. Doyle, Wamego, Kans.

Two New Bungalow Stations for Waterbury, Conn.—Two new fire stations will be erected at Waterbury, Conn., contracts for their erection having been recently let by vote of The Board of Public Safety. The new houses, both of bungalow type, frame, with tiled roof and other modern arrangements, will be erected on East Main street and on Highland avenue. The Highland avenue station will cost $28,000 and the East Main street house, $24,500, plus heating, plumbing etc.

New Mexico Body Becomes Chiefs' Association

By an amendment voted at its annual convention, held on July 2, in the E. Romerio Hose and Fire Company Building, in West Las Vegas, the New Mexico Firemen's Association has changed its name to the New Mexico Fire Chiefs' Association.

Time was allotted in the convention for round-table discussion of various topics pertaining to fire control and prevention. Ideas and suggestions were advanced by delegates to the convention and discussed by members as a whole. Different types of fire extinguishers were explained and discussed, the merits and defects of the different appliances were brought out. Reports of fire chiefs on proper inspection of schools and public buildings were made.

The following officers were elected: T. S. Craig Raton, president; P. D. Miller, Socorro, first vice-president; L. C. Yoakum, Portales, second vice-president; T. A. Rosenwald, East Las Vegas, secretary-treasurer. The following standing committees were elected: Legislative committee: F. H. Beatty, Clayton; L. B. Brown, East Las Vegas; George Mignardot, Santa Fe. Executive committee: L. W. Ilfeld, East Las Vegas; Charles Tamany, Gallup; D. E. Hathaway Deming; L. M. Massay, Clayton.

The convention ended with a banquet served by the E. Romey Hose and Fire Department in the building in West Las Vegas. A definite date has not been set for the meeting of the association next year, but the place of convention will be the same as this year.

What's Burning

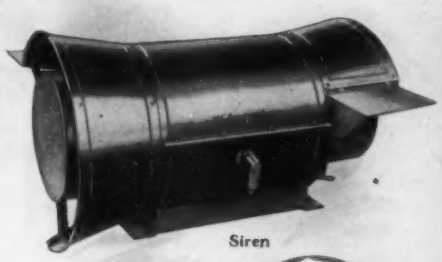
(*Continued from page 780*)

TOULON, ILL.—High School Bldg. destroyed..... 170
BERRYVILLE, VA.—Plant of Berryville Flour & Milling Co.. 65
MEDFORD, OREG.—M & M Dept. Store damaged..... 40
SPRINGFIELD, COLO.—Grand Cafe & adj. business estab.... 45
CAPE GIRARDEAU, MO.—Plant of Cape Milk Company..... 25
NEW YORK, N. Y.—Pechter Baking Company, Cherry St..... 800
HARRISBURG, PA.—Warehouse occupied by Appleby Bros..... 60
ROSSFORD, OHIO.—Plant of Ed. Ford Plate Glass Co..... 65
AVELLA, PA.—Several Business establishments damaged..... 40
TWISP, WASH.—Twisp Flour Mill destroyed..... 25
PLATTSBURGH, N. Y.—N. Y. State Normal School damaged.. 80
PERTH AMBOY, N. J.—Section of Ford Porcelain Co. plant... 80
PORTLAND, OREG.—Henry Weinhard Bldg. damaged..... 30
WESLACO, TEX.—Property of Watson & Stephenson Co..... 25
GALVESTON, TEX.—Plant of Leander Packing Co. damaged.. 50
SALT LAKE CITY, UTAH.—Plant of Inland Crystal Sal Co... 250
SUFFOLK, VA.—Property of Montgomery Lumber Co. damaged 170
LOUISVILLE, KY.—Warehouse of Commonwealth Produce Co.. 80
SALT LAKE CITY, UTAH.—Property in business section..... 80
BEDIAS, TEX.—Business establishments damaged..... 80
BUFFALO, N. Y.—Quaker City Cooperage Co. factory..... 170
PITTSBURGH, PA.—Jenkins Arcade bldg. damaged..... 25
WILLIAMSPORT, PA.—C. Gohl & Sons and adj. property..... 45
TOLEDO, O.—Warehouse of H. J. Spieker Co. damaged..... 25
YUKON, PA.—Green Hall and adjoining property..... 25
CHURCH HILL, MD.—Several business establishments damaged 40
CHICAGO, ILL.—Watling Mfg. Co. West Lake St..... 45

Altoona, Pa., Has New Fire Alarm Central Office

The new office was recently placed in service. It is equipped with the following apparatus and equipment: two 12 ckt. automatic storage boards; 532 cells of F. I. P. battery; four 50-inch 4-shelf metal battery racks; two 4 ckt. Nonpariel registers; two Peerless take-up reels; one 18 ckt. protector board; one Excelsior register; one Peerless take-up reels; one 10 ckt. automatic repeater and art metal cabinets.

Holtzer-Cabot Fire Alarm Systems for Small Towns



Siren

"M D"
Fire Alarm Station

Holtzer-Cabot Electric Sirens

are adaptable to the changing fire alarm requirements of your city. This Siren which sends out a peculiar penetrating, unmistakable call for help can be installed as a single unit at first to take care of your present needs, and later automatic coding equipment can be added to complete the fire signal system.

Write now for specifications and full information.

Fire Alarm Control Panel in Case

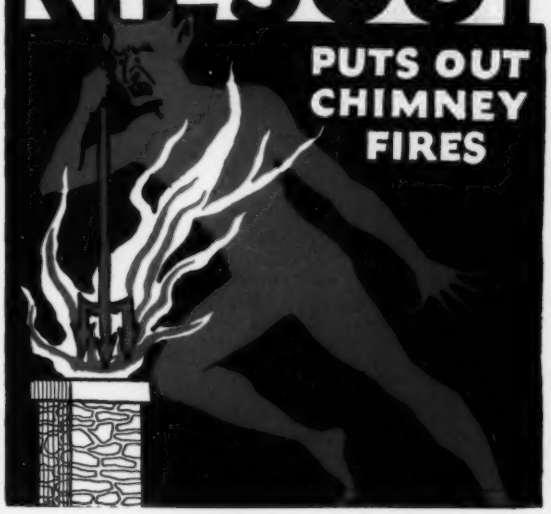
Manufacturers of Signaling Systems for over 50 years

THE HOLTZER-CABOT ELECTRIC COMPANY

125 Amory Street
Boston, Mass.

6161-65 So. State Street
Chicago, Ill.

KILSOOT



A better, safer and surer way to prevent and extinguish chimney fires is offered to fire chiefs and fire prevention bureaus in the use of "Kilsoot."

We repeat our offer to send liberal samples and full details regarding this remarkable chemical product—gladly furnished upon request.

NOW! NO MORE Running Up Ladders TO FIGHT CHIMNEY FIRES

for we can lick the best of them in 15 minutes. We send a man with two packages and he brings back one. One package KilSoot has done the job."

Chief Ticknor, Warrensburgh, N. Y.

"Threw the package into the furnace door and before I could get back up stairs, the fire was out. One man can do the work with KilSoot."

Chief Taggart, Asbury Park, N. J.

"It surely is wonderful stuff for chimneys and we think every householder should have it on hand."

Chief Brookins, Norwich, N. Y.

"It has always proven its worth to our people. In fact we believe from our experience with Kilsoot that it is quite the duty of every Fire Company to lead in the supplying of this cleaner if possible, as a duty they owe to their communities.

Chief Eidemiller, West Milton, Ohio.

"In every case it has put out the fire immediately and cleaned the chimney, too. You may now ship 6 dozen each for our two fire companies and 18 dozen for the taxpayers."

Chief Crandelmire, Brownville, Me.

We Value Your Opinion!
Write for Samples Today

KILSOOT CHEMICAL COMPANY, INC.
530 West 58th St., New York

FALSE ALARMS

HIGHER LAW

"Look at that woman cut in ahead of the chief down that side street. The chief ought to tell the police to take her number."

"He don't dare," replied the other fireman on the apparatus as he pulled on a rubber boot, "that's his wife."

TIME WON'T WAIT

In one of the fire stations in the heart of the business section, an officer with a most sarcastic and nasty temper was in charge. His fame spread far beyond the walls of the building, and many men in the service were happy and they were not stationed in this particular station.

However, because of vacations, a fireman from an outlying company was sent to fill in. He was accustomed to the somewhat lax method of procedure of his previous officer.

But the new superior soon set out to teach him how things should be done. Coming down stairs, he noticed the new fireman talking to a comrade while the polish on the pumper was waiting to be rubbed.

"Here, here," he bellowed, "today is Monday, tomorrow will be Tuesday and the next day will be Wednesday. The whole week half gone and nothing done yet."

TOO LATE NOW

A candidate for appointment to the fire department submitted himself to the civil service examination. Evidently the examiner must have been strong on civic problems for one of the questions asked was: "Could you be president of the United States?"

The applicant for the fire service wrote, "Before I could, but I've applied for a job in the fire department."

"Jump," said the fireman to the man on the twelfth floor of the burning building, "if you miss the net we'll catch you on the first bounce."

EXPECTED TOO MUCH

"Did you have a lot of fun at the firemen's convention as a company delegate?"

"Oh yes, barrels of it."

HE NEW THE CHIEF

"I want to see the chief," said the fire hose salesman.

"Sorry," replied the fireman, "but he is in conference with the mayor."

"Let me in," said the salesman as he offered the fireman a cigar, "I know a funny story, too."

APOLOGIES TO WALT MASON

Some say that Police and Firemen are paid enough already; that city and county taxes are climbing very steady; that countless men are out of jobs, the unemployed collect in mobs and would gladly take the place now filled by some poor fireman's face; that men who feel they're underpaid, should move right out to pick and spade. But ask these folks if they would go through fire and smoke and "copper's woe," and they will tell you that they are "Jake," would rather work with hoe or rake. And taxes—they are rather high, where you were born and where you die; and men will always look for jobs, where the "tourists" flock in mobs. So why not follow Henry Ford, and grant our boys good room and board and get the best that's to be had, for sister, brother, ma and dad.

E. D. BARNETT,
Long Beach, Cal.

Once upon a time, a convention speaker said, "I can't find words to express my feelings tonight,"—and he couldn't.

SIGN OF AMBITION

A fire company is made up of all kinds of members—there is the over-ambitious kind, the one who is indifferent to his work, and the type that appears to worry for everybody. Bob, who was affiliated with the ladder company was of the latter category.

When his company rolled up to a fire, each member grabbed some appliance and rushed to the burning house. In fact, many were loaded down with all that they could carry. Not so Mike.

"Hey there, Mike," shouted Bob, "take something else with you. Look at that fellow there with two axes."

"Sure," replied Mike, "he must be too lazy to go back twice."

Among the most popular contrivances is a fire apparatus that belongs to a volunteer fire company, particularly a company whose members appear to have other duties than to apply grease to the necessary motor parts. As the apparatus rolls down the street, the squeaks seem to say, "Now you stop!"

HELD IN SUSPENSE

Some firemen were leaning up against the fire station awaiting their turn to drill at the tower. Suddenly there was a crash, and a fireman came rushing towards the fire station.

"Did you hear that ladder crash?" gasped the excited one.

"Sure did," said one of the waiting firemen. "I hope that no one was hurt."

"Naw, no one's hurt, but the drill master is hanging from the second story window."

THE USUAL CUSTOM

The fireman had just married, and only one who has seen "The Fire Brigade," can appreciate what it means to be the wife of a fireman.

And so in order to sooth the young bride, he promised to phone her and tell her that he was all right after every large fire.

In the drug store near the scene of the big fire, a woman who had been waiting patiently outside of the phone booth, finally opened the door and said to the fireman inside, "Young man, I've been outside this booth for the past half hour, and you've been inside and haven't said a word."

"Yeh, that's right. I've been talking to my wife."

NO COMPLIMENT PAID

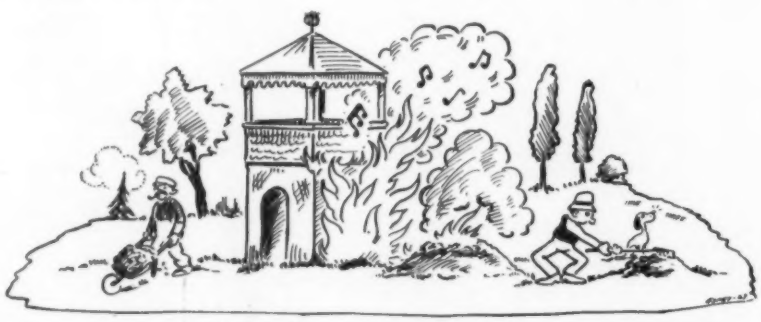
It is the custom for fire apparatus manufacturers delivering new fire apparatus to send a delivery man with the machine to train the firemen in the manner in which the apparatus should be operated. The man sent to this town was not of army build—his waist measurement greatly exceeded his chest diameter.

He was driving the apparatus down the main highway with some of the local firemen, when in passing by a filling station, he remembered that he needed some oil for the motor.

"I want two quarts of oil."

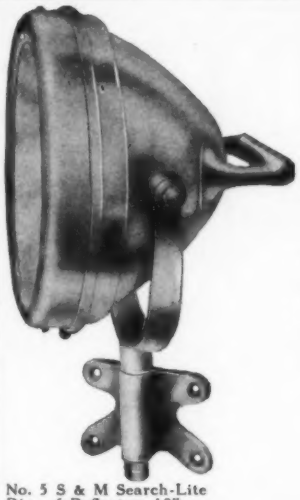
"What kind, heavy?" asked the filling station attendant.

"Look here, young man," was the indignant response. "Don't get fresh with me."



Maybe the Trouble Was Due to Too Many "Hot Mammas"

Albany, Wis., had a clean-up day—it was not the ordinary kind of clean-up—they cleaned up everything. Dead leaves that were in the parks all winter were gathered near the band stand and the wind blew the flames to the music center. Ghosts of many hot tunes kept time to the crackling of the flames as the band stand was consigned to the altar of the gods. Many a lovesick couple will certainly miss the popular landmark.



No. 5 S & M Search-Lite
Dia. of Reflector, 10"
Light Projection, 4000 ft.

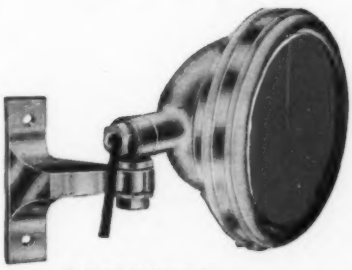
S & M
BETTER LITE-ING EQUIPMENT FOR FIRE APPARATUS

S & M Search-Lites, Head-Lites, Safety-Lites, Oval-lites, Pick-Up Lites, Spot-Lites and Tail-Lites, are used by fire and police departments throughout the country, because of their incomparable quality in construction and lighting efficiency. Descriptive catalog and prices on request.

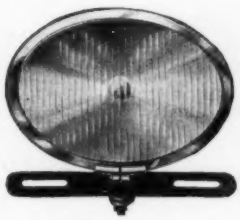
S & M LAMP CO.
118 W. 36th St., Los Angeles, Calif.

No. 21 S & M Head-Lite
Dia. of Reflector, 10"

No. 8 S & M Safety Side-Lite
Dia. of Reflector, 4¾"
No. 18 Tail-Lite, 4¾" reflector

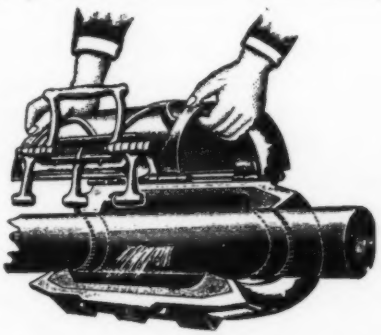


S & M Safety-Lites
Dia. of Reflector—No. 90, 7½"; No. 80, 6½"; No. 70, 5¾"

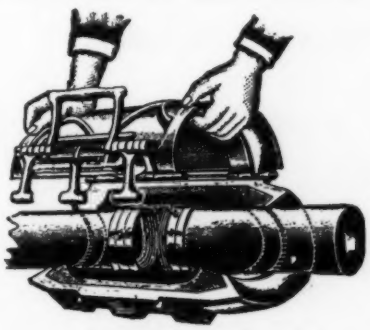


S & M Oval-Lites
For Curve Illumination
Size Reflector, 6¼ x 8¾"

S & M Safety Side-Lites
Dia. of Reflector—No. 7, 4¾"; No. 14, 6½"



The Old Reliable Better Than Ever



The New Triple Lock Cooper Hose Jacket
and Universal Coupler

The "Old Reliable" Cooper Hose Jacket with improved Bronze triple lock will stand any pressure and insure you against any leakage or coupling trouble. They give unlimited coupling facilities. Instantly adjustable without cutting off stream and are indispensable, indestructible, inexpensive. Instantly repair all leaks. Made in sizes for 2½ and 3½ fire hose and small sizes for chemical hose. No fire department is complete without one or more as part of their standard equipment, and we shall be glad to send complete information and prices on request.

THE COOPER HOSE JACKET CO.
Minneapolis, Minn.

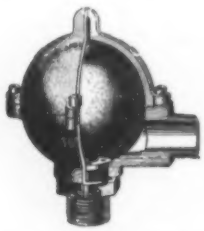
PROTECTUS

Fire Service Water Meter

The Only Fire Service Meter

Approved by Underwriters' Laboratories, Inc.

Red Top Relief Valve



The only water Gravity relief valve approved by Underwriters' Laboratories, Inc. Saves fires resulting from explosions of domestic hot water boilers.

Unless fire lines are adequately metered Water Departments lose thousands of dollars in revenue every year. This is due to the use of volumes of water for other than fire purposes. Protectus Meters either stop indiscriminate use of water, or accurately measure and register all flows, thus insuring protection from loss of revenue.

Protectus Meters are paramount in durability under heavy duty over a long period of years. They are an assurance against frequent repair costs.

Demands by Underwriters' Laboratories that a fire line meter must operate with unfailing reliability and minimum loss of head, have been definitely met by one meter—the Trident Protectus.

NEPTUNE METER COMPANY

Pioneers in Progress

50 EAST FORTY-SECOND STREET, NEW YORK CITY
NEPTUNE METER CO., LTD., 345 SORAUREN AVE., TORONTO, CAN.
Boston Chicago San Francisco Atlanta Los Angeles Seattle Portland St. Louis Denver

Help Yourself! Free Service! Here's the Combination!

Fire Protection Equipment And Supplies

Fire Protection Equipment And Supplies

1 Acid Siphons
2 Adaptors for Changing Hydrant Threads.
3 Acid Jars and Rings.
4 Aerial Ladders, Detachable.
5 Aerial Trucks.
6 Alarms, Siren, Electric.
7 Alarm Systems, Industrial.
8 Alarm Systems, Municipal Telegraphic.
9 Alarms, Thermostatic.
10 Asbestos, Clothing.
11 Badges, Insignias, Buttons, etc.
12 Banners, Trumpets, etc.
13 Battery Jars.
14 Battery Zincs for Fire Alarm Batteries.
15 Bells, Fire Alarm, Municipal.
16 Body Equipments.
17 Boxes, Gongs, Reels, Registers, Fire Alarm.
18 Brakes, Air.
19 Brake Linings.
20 Brooms, Fire.
21 Building Materials, Fire Retardant.
22 Cable & Wire, Fire Alarm.
23 Caps, Firemen's.
24 Chains, Non-Skid, Fire Apparatus.
25 Chassis for Fire Apparatus.
26 Chemical Engines and Tanks.
27 City Service Trucks.
28 Coats & Suits, Firemen's Quick Hitch.
29 Combination Chemical & Hose Cars.
30 Cutting & Welding Equipment, Blow Torch.
31 Cutting & Welding Equipment, Electric.
32 Deluge Sets.
33 Door Openers, Fire Station, Automatic.
34 Extinguishers, Fire, Soda & Acid.
35 Extinguishers, Fire, Tetrachloride.
36 Extinguishers, Fire, Foam.
37 Extinguishers, Fire, Powder.
38 Fire Boat Nozzle Equipment.
39 Fire Department Supplies, General.
40 Fire Drills & Organizations.
41 Fire Exit Devices, Door Opening.
42 Fire Alarm Posts.
43 Fire Escapes, Portable.
44 Fire Escapes, Rigid.
45 First Aid Equipment.
46 Flare Lights.
47 Flashlights, Hand.
48 Foam Liquid for Extinguishers.
49 Gas Masks and Respirators.
50 Gas & Smoke Helmets.
51 Gasoline & Oil Handling Equipment.
52 Goggles, Firemen's.
53 Helmets, Metal, etc.
54 Hose Carts, Reels & Racks.
55 Hose Clamps.
56 Hose Fire.
57 Hose, Chemical.
58 Hose Holders.
59 Hose Jackets.
60 Hose Standardization Tools.
61 Hydrant Draining Pumps.
62 Hydrants, Fire.
63 Jacks for Fire Trucks.
64 Jacks, Shoring & Prying.
65 Ladders, Fire.
66 Lightning Arresters.
67 Motorcycles, Fire Dept. Equipped.
68 Nets, Life.
69 Nozzles, Pipes & Misc. Brass Goods.
70 Packings, Pump.
71 Pads, Pole Hole.
72 Paints, Fire Resisting.
73 Priming Ether, Motor.
74 Pumping Cars, Standard.
75 Pumping Cars, Foam.
76 Pumps, Fire Apparatus.
77 Pumps, Fire Service, Stationary.
78 Pumps, Portable, for Fire Protection.
79 Record Books, Fire.
80 Relief Valves.
81 Reviving Apparatus, Oxygen.
82 Rubber Clothing.
83 Searchlights.
84 Shingles, Fire Retardant.
85 Shirts, Firemen's Special.
86 Sirens, Apparatus & Chiefs' Cars.
87 Sliding Poles.
88 Soda & Acid Chemicals.
89 Spark Plugs, Fire Apparatus & Motorcycles.
90 Squad and other Auxiliary Cars.
91 Sprinkler Head Shut-Offs.
92 Sprinkler Supervisory Service.
93 Sprinkler Systems, Automatic, Foam.
94 Sprinkler Systems, Automatic Water
95 Starters, Fire Apparatus, Automatic, Air.
96 Steam Fire Engines.
97 Tarpaulins & Fire Blankets.
98 Tetrachloride Chemicals.
99 Thawing Equipment, Hydrant.
100 Tires, Fire Apparatus, Pneumatic, Solid, Cushion and Non-Skid.
101 Tractors.
102 Traffic Clearing Systems.
103 Triple Combination Pumping Cars
104 Uniforms.
105 Water Towers.
106 Wheels, Cushion.
107 Whistles, Fire Alarm, Compressed Air.
108 Whistles, Fire Alarm, Steam.
109 Whistles, Fire Apparatus.
110 Wrecking Trucks.

Just run down the list of equipment and jot down on the coupon below the numbers that indicate the equipment in which you are interested. Then fill out rest of the coupon and mail it to us.

We will then request the leading manufacturers of such equipment to send you descriptive literature and prices direct without any cost to you or obligation whatever.

The manufacturers we notify will gladly do this because they are advertisers and good friends of this publication and want to cooperate with our readers in every way possible in the improvement of their departments. So help yourself! Get what you want!

—TEAR OFF HERE—

FIRE ENGINEERING

225 West 34th St., New York City.

As a fire protection official I should like to have descriptive literature and complete information mailed to me, without cost or obligation, on the equipment indicated by the following numbers:

Nos.....

Nos.....

Nos.....

Nos.....

Date.....

Name.....

Position.....

Street.....

City and State.....

.....

.....

.....

.....7-27-27

For Information on Any Equipment Not Listed Above, Write on This Page or Use Separate Sheet.

R. D. WOOD & CO.
Philadelphia, Pa.

Manufacturers of

"MATHEWS" Fire Hydrants
(Reg. U. S. Pat.)

Extend Greetings to the members of

The International Association of Fire Chiefs

whether in Portland or at home

ADVERTISING INDEX

Advertising Pays—in Fire Engineering

	PAGE
Ahrens-Fox Fire Engine Co.	731
American Fomon Co.	747
American District Telegraph Co.	806
American-LaFrance Fire Engine Co.	736–737
American Steam Pump Co.	761
Anderson Coupling & Fire Supply Co.	822
B. & M. Mfg. Co.	825
Bi-Lateral Fire Hose Co.	825
Body Guard Mfg. Co.	814
Boyer Fire Apparatus Co.	755
Braxmar Co., C. G.	757
Buckeye Iron & Brass Works	817
Buffalo Fire Appliance Corp.	806
C. A. M. Mfg. Co.	*Back Cover*
Carpenter Mfg. Co.	822
Clay, Inc., John H.	814
Clifton Mfg. Co.	822
Combination Ladder Co.	818
Cooper Hose Jacket Triple Lock Co.	829
Darling Valve & Mfg. Co.	734–735
Decot Machine Works	825
Eastman Co., Samuel	821
Eddy Valve Co.	818
Elkhart Brass Co.	817
Erick Electric Siren Co.	825
Eureka Fire Hose Mfg. Co.	*Front Cover*
Everson-Ross Co.	806
Fabric Fire Hose Co.	*Inside Back Cover*
Federal Electric Co.	738–739
Firestone Tire & Rubber Co.	834
Foamite-Childs Corp.	*Inside Front Cover*
Four Wheel Drive Auto Co.	751
Fulton Bag & Cotton Mills	749
Gamewell Co.	760
Gibbs-Wahlert Mask Co.	822
Hahn Motor Truck Co.	822
Hale Fire Pump Co.	809
Harrington-Seaberg Corp.	810
Henderson-Ames Co.	818
Henderson & Co.	818
Hendrie & Boethoff Co.	822
Holtzer-Cabot Co.	827
Information for Buyers	**831**
International Harvester Co.	805
Johns-Manville, Inc.	742
Johnson Co., S. T.	753
Kilsoot Chemical Co.	827
Lally Fire Appliance Co.	825
Larkin Mfg. Co.	822
Mack Trucks, Inc.	745
Maxim Motor Co.	825
McGregor, Wallace	810
Mine Safety Appliance Co.	746
Morse & Sons Inc., Andrew J.	821
National Carbon Co., Inc.	813
National Electric Specialty Co	825
National Fire Protection Co.	740
National Standard Threadless Coupling Corp.	754
Neptune Meter Co.	830
Northern Fire Apparatus Co.	756
Nott Co., W. S.	743
Pirsch & Sons Co., Peter	759
Prospect Fire Engine Co.	752
Quaker City Rubber Co.	818
Reed's Sons, Jacob	818
Rensselaer Valve Co.	818
Sanford Motor Truck Co.	750
Seagrave Corp.	732–733
S. & M. Lamp Co.	829
Signal Shirt Co.	821
Southworth Machine Co.	818
Sterling Siren Fire Alarm Co.	741
Stutz Fire Engine Co.	748
Union Water Meter Co.	817
Waterous Company	744
Waukesha Motor Co.	822
Wood & Co., R. D.	832
Woodhouse Mfg. Co.	810

Firestone Tires, 40" x 8", on our 750 Gallon Engine, now 3 years old, show very little wear. They have answered 443 calls. I consider the tread very good for snow. Frank P. Hall, Chief Fire Dept., Athol, Mass.

Firestone Dealers

Can Save You Money and Serve You Better

Tire conservation—getting out of tires, all the mileage built into them at the factory—is an important part of the service of Firestone Dealers. They have modern repair equipment, especially designed by Firestone, to assure Fire Departments quick, uniformly dependable repair service.

Firestone Dealers are trained in the latest tire repair methods at the Company's Repair Schools, conducted at the Factories and in principal Branch Cities throughout the United States. They are experts in rebuilding, at low cost, tires that have been injured, protecting tire users from loss.

Firestone Dealers have also had the advantage of Tire Educational Meetings, where by means of motion pictures, charts, tire samples and engineering data, they learned details of tire design and construction. This keeps them up-to-date on all matters of tire development, from the source best qualified to give it—Firestone.

The Firestone Dealer can give you better service for he receives Firestone Gum-Dipped Tires and Steam-Welded Tubes direct from the nearest of 148 Factory Warehouses. He can save you money and serve you better.

MOST MILES PER DOLLAR

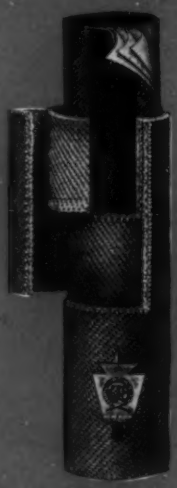
AMERICANS SHOULD PRODUCE THEIR OWN RUBBER . . Harvey S. Firestone

An Unusual Advertisement
—worth reading.

An Unusual Hose
—worth using.

FIRE HOSE

MADE LIKE AN AUTOMOBILE TIRE
IN TWO PARTS INNER TUBE *and* OUTER JACKET



"Fabric" Features:

Separable Inner Tube

—lasts longer than same quality tube cemented to the fabric because it is in complete repose when hose is not in service.

Will Not Slide or Buckle

—the diameter of the tube is reinforced in such a way as to eliminate it.

"Fabric" Features:

A Wax and Gum

treated fabric jacket—absolutely waterproofed by a special method. Cannot mildew or rot.

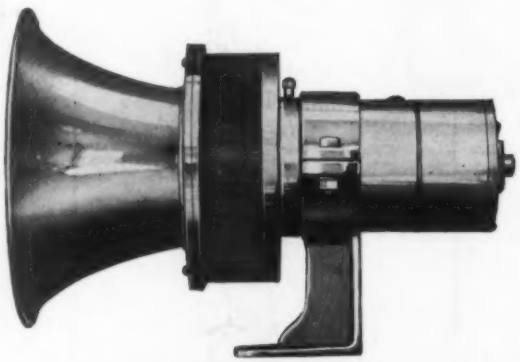
Other New Features—

The strands are "cabled" by a new process. The Durability of Fabric Hose is phenomenal.

FABRIC FIRE HOSE CO.
NEW YORK

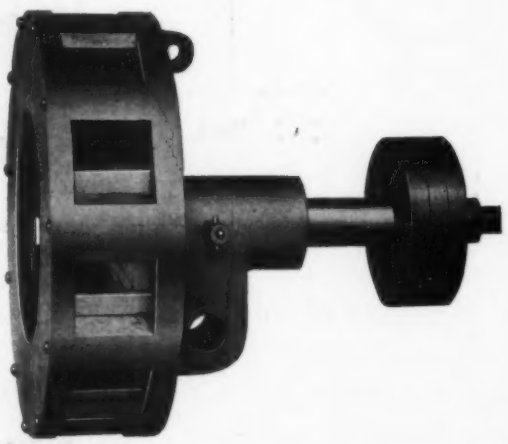
HOSE facts of interest to every buyer of fire hose will be found in the interesting illustrated booklet issued by the Fabric Fire Hose Co., New York, telling not only why Fabric Wax and Para Gum Treated Fire Hose is the most practical and efficient hose for you to use, but explaining the actual details of its manufacture so that you know just what you are buying and why it is superior. Write for it—Fabric Fire Hose Co., 9-15 Park Place, New York.

You Have Tried The Rest
Now Install The Best
C-A-M Siren



We are now manufacturing a friction or mechanical siren in addition to our electrical siren. This enables us to furnish any type siren desired.

See Our Display
At Portland



All of Our Sirens Are Unconditionally Guaranteed

C-A-M Manufacturing Company

802 Humboldt Bank Bldg., San Francisco, Calif.

FIRE ENGINEERING, JULY 27, 1927
PRINTED BY THE WILLIAMS PRESS, ALBANY, N. Y.